

STATE AND AGRARIAN CHANGE IN BIHAR

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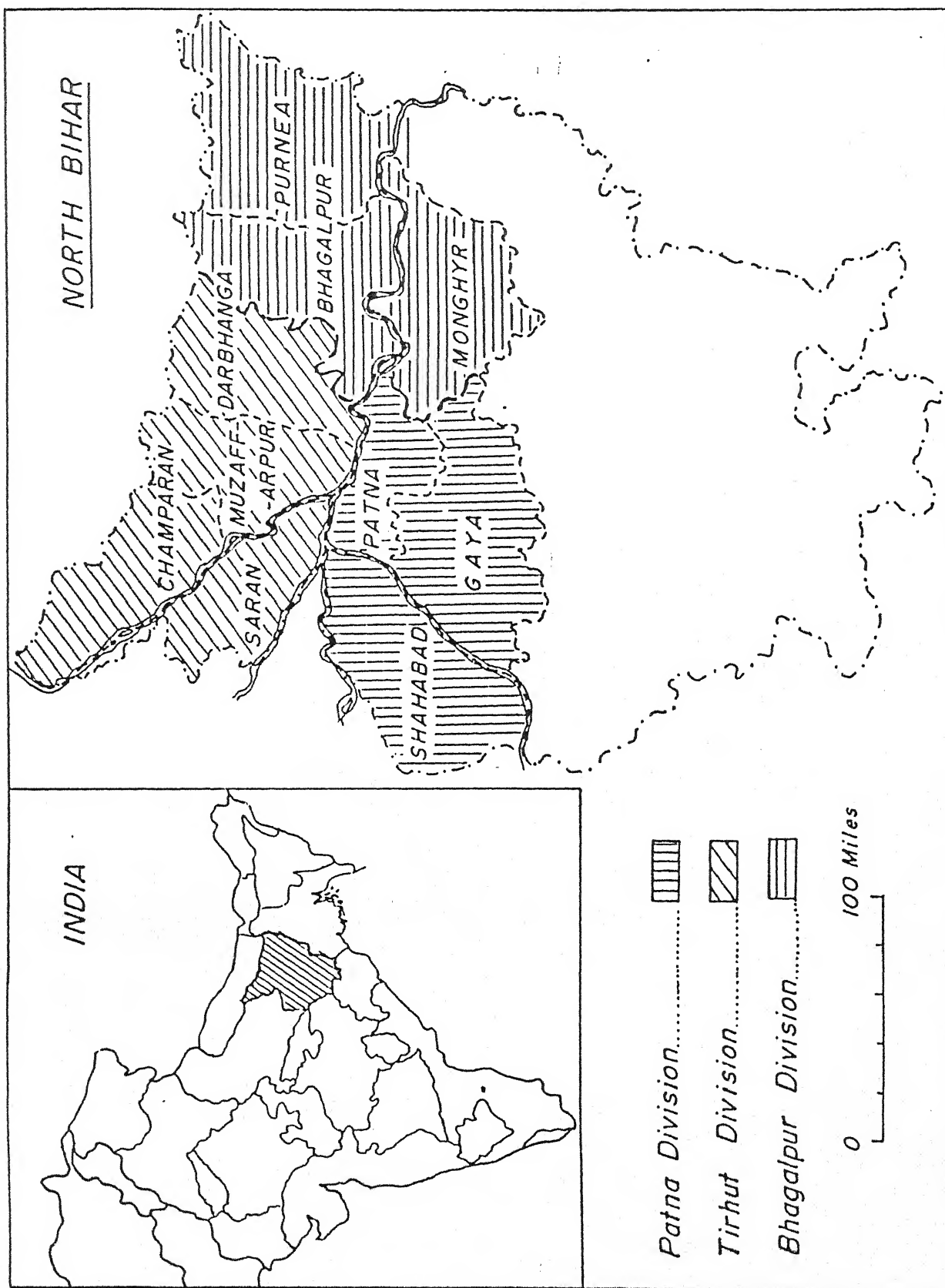
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Chapter I

INTRODUCTION

In 1757 the East India Company acquired the Dewani of Bengal, Bihar and parts of Orissa which later came to be known as the Bengal Presidency. Bihar formed the western most region of the presidency. In 1858 the rule of this province was assumed by the British Parliament along with the rest of the country as a sequel to the countrywide protest against the buccaneering mercantilist policy of the Company which is known as the first Independent movement of the country.

During these two hundred years of its rule, the Pax Britannica substantially altered the social structure of this country through trade and tariff, railways, roads and canal constructions¹ as well as through land legislations etc., all superimposed from above². The Indian economy, Marx said, was thus dragged into world economy, the greater part of its productive forces either destroyed or refashioned to meet the needs of the British economy and the Indian economy was forced into a satellite economy (Marx and Engels, 1965; Ghosh, 1985)³.

In these earlier writings Marx talked about the dual character of bourgeois and said that the British bourgeois by destroying the unchanging pre-capitalist societies like India would ultimately pave the way for subsequent progress of these societies. In his subsequent writings, however, he became silent about this progressive aspects of bourgeois and talked about their disastrous effect on the colonies⁴. In these later writings he also talked about the resilience of the pre-capitalist formations and suggested that the obstructions put up by these pre-capitalist forces would ultimately decide the process of change in these societies like India and China⁵.

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1. On the impact of roads and railways on the colonial economy, see Bagchi (1982 : 85-90). For specifically railways, see Thorner (1950) and for irrigation in the context of the United Province, see Whitecombe (1971).
 2. For the background discussions of various legislative and administrative measures and the factors that gave them their final shapes, see Guha (1969) and Stokes (1969).
 3. See the letter written by Marx to N. F. Danielson, April 10, 1879 in Marx and Engels (1965) and the articles of Marx in Marx and Engels in On Colonialism.
 4. Lenin also talked about the regressive character of the capitalism at the stage of imperialism, Lenin (1977 : 298-300). Luxemburg specifically pointed out the internal strength of the native economy and how the capitalist colonialism would take long time to refashion. Luxemburg (1951 : 363-385).
 5. See Mao on this : "External causes (i.e. colonialism here)", Mao said, "are the conditions of change and internal causes are the basis of change and that external causes become operative through internal cause". (Mao Ze-dong, 1968 : 28)

Looking from this point of view, the literature on colonial India can be divided into two broad categories. One that looks into economic growth from the technological-economic point of view⁶. It assesses economic growth in terms of the growth of the factors of production, the human labour itself being reduced to one of the factors of production. The other school looks into economic development from the point of view of change in the relations between workers and non-workers in the process of work. This is the political economy school. We will confine our discussions within this later school.

The debate on the mode of production of the Indian agriculture⁷ falls within this later school. The debate has thrown up many important questions about colonialism, imperialism and process of change in the transitional societies like India (Rudra, 1970; Patnaik, 1971, 1972a, 1972c; Chattopadhyay, 1972a, 1972b; Alavi, 1975). But the debate has remained confined to the specific theoretical issues as such. The scholars have intensely debated the issues like the character of Indian agriculture (Patnaik, 1971; Chattopadhyay, 1972b) or such questions as whether the growth of agricultural labour is the necessary and sufficient condition of growth of capitalist relation or on the degree of correspondence between the productive forces and production relations in the transitional agriculture. But the study of the concrete situation remains relatively ignored⁸.

The other limitation of the debate is that it gave inadequate attention to the study of the process of development in the Indian agriculture through scholars like Patnaik (1971, 1981), Rao (1970), and Chattopadhyay (1972b) frequently mentioned the importance of the study of the process or trend to fully comprehend the emerging relations in the Indian agriculture. Of course, in this the scholars were hamstrung by the use of the data. Patnaik (1971, 1972a, 1972b) based her argument on her study of the sixty-six big farmers in the ten districts of five states. The basis of Rudra's (1970) work was the farm management survey. But these studies are mostly one-point cross sectional studies and their limitation for any analysis of the process of change is obvious. Others

6. Political economy, Rubin says, do not deal with relation between things to things as done by Vulgar economists, nor relation between people to things as by marginalists, but relation between people to people in the process of production (Rubin, 1973).

7. The debate has, by and large, remained confined to the agriculture. For critical review of this debate see, Hariss (1980), Thorner (1982) and Pandian (1970).

8. Some recent exceptions are there however. See, for example, Pandian (1990).

like Chattopadhyay (1972b) and Prasad (1972, 1973) used information from official sources for their study ⁹. But in their case too the difficulties of matching official information to the needs of the analysis of the complex process of change in a transitional society are clearly evident.

Further, the debate ignores other sectors of the Indian economy and, therefore, fails to present the holistic view of the development process. Beyond this debate, however, there is a burgeoning literature on this aspect of the colonial economy. They can be divided into two broad categories ¹⁰. One is the nationalist school who approached the problem of Indian economy under colonialism from the point of view of the British appropriation of vital resources from India. The works of Majumdar, Gadgil, Dutt, Gopal, etc. fall in this category. Within the explicit Marxist framework there are works which approach the problem primarily in the form of relationship of capitalist colonialism and their dependent colonies. We have in this category M. N. Roy, Rajni Palme Dutta, Pavlov, Levkovski, Chandra et. al.

In recent times we have one major addition in this literature in Bagchi's Private Investment in India, dealing primarily with the impact of British tariff policy on the course of Indian industrialisation. In his subsequent work 'The Political Economy of Under development', Bagchi further extended his framework to include the study of the development of China, Indonesia and India under the aegis of capitalist colonialism. In these and other of his subsequent writings, Bagchi raised many crucial questions regarding the character of colonialism and imperialism in the colonial societies. Two things need some special mentioning here. First, various infrastructures that the colonists super-imposed on the colonial societies had been fashioned, on the one hand, to serve the colonists' interest and, on the other hand, to preserve the indigenous pre-capitalist formations ¹¹. Second, in his study of India, China and Indonesia, along with Latin American countries, he has shown that the internal formations of these societies have put specific character to the development of these societies under the capitalist colonialism (Bagchi, 1982 : 72-94).

9. See also Alavi (1975), Sen (1976), Banaji (1977), etc.

10. For literature, see Sarkar (1983) and Kumar and Desai (1982).

11. On India, see Bagchi (1982 : 78-94). The specific marxist argument is that during its early competitive stage the capitalist relations completely radicalised and replaced the pre-capitalist relations. But during the stage of imperialism, the Capital lost its progressive character, became reactionary and tended to preserve the pre-capitalist relations to cater to its needs.

Besides this, there are other works on specifics of Indian economy like commercialisation of agriculture. Notable among these, and relevant to us, is Blyn's (1962) work on the agricultural production of British India from 1892 to 1947¹². Using the crop data, Blyn has shown that in a generally depressing agriculture in British India, the cash crop production increased. While the British India as a whole and specially Eastern region lagged behind and certain areas within it have prospered. There are also other works which deals with specific problems of specific regions. For example, we have to name a few prominent ones, Whitecombe (1971) and Amin (1984) dealing with the agrarian relations in the United Province; Dewey (1974), Heston (1973), Charlesworth (1979) and Guha (1985) on Bombay Presidency; Bhattacharya (1985) on Punjab; Mishra (1985) on Punjab and Bombay.

On Eastern India in general and Bihar in particular, Choudhuri has done significant amount of work on commercialisation of agriculture in Bengal and Bihar region, specially in the nineteenth century as also on agrarian classes including the labouring classes¹³. We will note briefly his articles "Agricultural growth in Bengal and Bihar, 1790-1860" (1976) and his writings in the Cambridge Economic History of India (1982).

The agricultural production in Bihar in the nineteenth century, Choudhuri said, was slow and uneven (1976 : 331). In some of the Bihar districts the pace was quicker in the first half of nineteenth century than in the second. The growth took place, according to Choudhuri, in the backdrop of 1769-70 famine, radical institutional changes, particularly in the land relations and in a situation of general labour scarcity. In Bihar, in the period subsequent to that some agricultural growth was possible due to population growth and immigration of tribal and semi-tribal labour. But the expected growth was arrested due to poor labour quality, deadly disease and widespread prevalence of indebted, attached labourers.

In the Cambridge Economic History of India, Choudhuri describes the 'labouring classes in greater details'. First, the agricultural labourers were not always landless, but they usually derived greater part of their income from working in others farm. Second, they were distinguished from the share-croppers by status which was reinforced by the

12. We have restricted ourselves to only commercialisation of agriculture which is directly relevant to us. For detailed bibliography, see Sarkar (1983) ; Kumar and Desai (1982) and also Charlesworth (1985).

13. See for example, Choudhuri (1967, 1975, 1975b).

caste system. The agricultural labourers came from the lowest castes. Third, the sharecroppers planned their production. But the agricultural labourers merely worked in others farm. But then these two were not exclusive categories ¹⁴.

In Bihar, Chaudhuri argued, in the late nineteenth and twentieth century the components of the labouring classes changed. The bondedness declined and the number of agricultural labourers increased. The loss of land, diminution of per capita holding size, impoverishment of peasantry, increased the number of agricultural labourer (Chaudhuri, 1982 : 176). On the other hand, the number of attached labour declined due to increased alternative job opportunities (e.g. in sugar mills), legal sanctions and peasant protests (Choudhuri, 1982 : 164-165).

Choudhuri, however, emphatically pointed out that the deficiency of the agricultural data makes it almost impossible to either measure the changes in the composition of the labouring classes adequately or to identify the factors contributing to its changes. The wage data was also faulty. It is not possible to measure the changes in the income of the agricultural labourers. But there is no doubt, Choudhuri says, that there was an increasing tendency to pay wages in inferior grains. Further, the wages of tribal labourers declined by 25 per cent (Choudhuri : 164-172).

Choudhuri's discussion of crop production in Bengal and Bihar ends at 1860s. Our study covers the period between 1892-1941. This is perhaps the most crucial period of agricultural production in British India as it is during this period the British Raj penetrated deep inside the Indian territory through the construction of rail and roadways which brought in its trail the market and traders ¹⁵. During this period the agricultural labourers also grew in number in Bihar. Choudhuri pointed out that during this period the number of landless casual labourers increased and the number of bonded labours decreased. It is, however, difficult to assume that the growth in the number of landless agricultural labour will automatically lead to decline in the bondedness. The reality is more complex and needs greater probing.

In this study the focus will be on these two aspects of a colonial society in the context of the concrete situation of North Bihar comprised of the northern districts of the province of Bihar. Situated between the Bengal proper in the east, the United Province

14. For the limitations in their power of decision making, see Bharadwaj (1974 : 3 and 4).

15. See on this Thorner (1950).

in the west, the Nepal terai in the north and the Orissa-Madhya Pradesh region in the south, the province of Bihar was part of the Bengal Presidency till 1911. In 1911 the province of Bihar along with Orissa was separated from the Bengal Presidency. In 1936 Bihar was separated from Orissa to form the modern province of Bihar.

In terms of physical geography this landmass can be divided into two : the fertile plains of North Bihar and the plateau of south Bihar. The North Bihar plains constitute the region of out study. Except the forested areas of the district of Champaran in the North-West, the rest of this region is plain land. Except the undifferentiated soil in the district of Champaran, the region generally has alluvial soil cover (Geddes, 1982 : 170-123).

Winter-cut rice is the main crop. It is also the main cereals of the Bihari. The autumn rice constitutes lesser portion of the total rice produced in Bihar. It is quick-growing, low yield per acre crop. Wheat, Barley, pulses and oil seeds are the main rabi crops. With the waning of the indigo cultivation in the nineteenth century, the sugarcane emerged as the main cash crop.

The agricultural season begin in the month of April, with the first early showers. But the agricultural activities are carried on according to the Hindu calendar, which is divided into 27 lunar asterisms, called nakshatras, of roughly similar length (Grierson : 270-285). The winter rice is transplanted from nurseries in the month of July and August. The crop continues to grow with the water till mid-September when the water is drained off. It needs inundation after fifteen days at the time of Hathiya nakshatra (26th September to 7th October). The Hathiya rain is therefore considered crucial to the peasants, for the failure of Hathiya rain means the failure of winter crop and scarcity. The anxiety of the peasants about a timely Hathiya rain is reflected in numerous religious functions during this period.

The anxiety of the cultivators had material basis. The only source of water in this region was the monsoon, which was unpredictable. The record shows that in the course a monsoonal cycles of four to five years there is usually a two or three years of unfavourable monsoon. Only alternative to this whimsical water supply sources is the irrigation. But the irrigation in this region is inadequate. The situation in the south Bihar districts is only relatively better where cenals, ahars and pyne provided some respite to the water scarcity. All these means that the failure of monsoon leads to shrinkages in the

agricultural activities. With little or no industries except sugar mills and medium size railway workshops, the agricultural depression means scarcity and sufferings for the dominantly agricultural population of North Bihar.

The agricultural production in this region had not been very encouraging since almost the second half of the nineteenth century. As pointed out by Choudhuri, the agricultural production in Bihar between 1770 and 1860 had been slow and uneven. Blyn (1966) further pointed out that the crop production in the eastern part of British India between 1892 and 1944 lagged behind and said that the maladies for this depression possibly lied in the Bihar-Orissa region. Islam (1978) further strengthened Blyn's observation by showing that the agricultural production in Bengal proper between 1920 and 1947 was not that stagnant. In the first three chapters of this work these observations will be enquired into in the light of the crop production in North Bihar in the period between 1892 and 1941. In the rest of the chapters the conditions of the rural labouring classes, their income etc., their relations with their cultivator employers and also the changes in their relationship will be probed. The focus all along this work will be to study these changes in the context of the increasing market penetration under the aegis of colonialism.

Chapter II

ON CROP STATISTICS

"All that is done at present is for the local police officers to make a guess, at which in succession the sub-divisional officer, the District officer and the Director of Agriculture guess again" - J.A. Hubback in Sampling for Rice Yield in Bihar and Orissa.¹

The collection of agricultural statistics in India largely followed the diktat of the State (Meston, 1933 : 1-20). In the Mughal period, the Mughal State wanted information on land and the land revenue and the Mughal administration collected volumes of information on these items. In the initial period of its rule, the British Raj was primarily concerned with the nature of property in the Indian land and the revenue possibilities from it, and the British administration collected and published large amount of data on these items. In the later part of its rule the recurring famines and expanding commercial activities made the Raj aware of the necessities of information concerning agricultural production, population etc and the Raj officials collected considerable amount of information on these items.

For our purposes, this information can broadly be categorised into two types. One category comprises the reports, notes, memoranda etc. written by the officials at various levels. They contain not only quantitative information but also the official comments and observations. The other consists of the information on cropped area, agricultural production, etc. i.e., primarily the quantitative information, which were collected in a routine manner and published in such official publications as Season and Crop Reports, Agricultural Statistics etc.

In this chapter and the following two we will primarily be concerned with the second categories of information though we will also be using official observations etc. i.e. the qualitative information as support for our argument based on the first.

2.1 On method of crop estimation

The crop statistics are estimated figures, estimated by the Agricultural Departments. The estimating formula is as follows: crop acreage x standard (normal yield) per acre x seasonal condition. Thus if the cropped acre is 60,000 acres, the standard

1. Hubback (1921)

yield 500 lbs. per acre and the percentage estimate(condition factor) 80 percent, we have²

$$60000 \times 500 \times 80/100 = 24,000,000 \text{ lbs. of output.}$$

Estimators are, therefore, (1) area, (2) standard yield per acre and (3) condition factor or percentage estimate.

In the temporarily settled areas the acreage data was collected by the Patwaris³. In the permanently settled areas, however, with the absence of any definite data collecting system it fell on the lowly Chowkidar to collect the acreage data,⁴ though in some areas of permanently settled areas it fell on the Patwaris to collect the crop data. But these were exceptions⁵.

The acreage data collected by the Chowkidar have often been described as conjectural and unreliable⁶. The district officials reports in Bihar had repeatedly complained that though the Chowkidar, the village policeman, and the Patwari, (who kept the land records) were employers of the State, they remained by and large subservient to the rural gentry, who could try and influence the Patwaris and the Chowkidars to underreport the cropped areas and thus earn revenue remission. Desai, however, did not agree with the view that this collusion between Patwaris and the Zamindar is a source of distortion of the crop statistics (Desai, 1978 : 175-176; Bagchi, 1982 : 84). He argued that the remission of revenue was usually granted by the district officials who would decide about it only after a careful enquiry into the crop situation in the entire tract rather than on the basis of the reports of one or two patwaris from a few disparate thanas or villages. As further evidence, in support of his argument, he said that that the trend of revenue collection in the permanent settlement areas had seldom shown any relationship with the natural calamities such as droughts or floods which were frequent in these

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2. Estimates of Area and Yield of Principal Crops in India, 1916-17; p.22.
 3. Report of the Royal Commission on Agriculture in India (Abridged Report), Bombay, 1928; p. 605. In Bihar, the Patwaris kept land records. The collusion between Patwaris and the Zamindars and the consternation of the district officials because of their failure to tame the Patwaris and wean them away from the Zamindars is a recurring theme of the official documents. Just for example one can look at A.P. Macdonnell, Report on the Food Grains Supply and Statistical Review of the Relief Operation.
 4. See (a) Report of the Indian Economic Enquiry Committee, 1925, Calcutta, 1975; Vol.I, p.17; (b) Final Report of the National Income Committee, February, 1959; (c) Islam(1978:20-22).
 5. In permanently settled areas the data is collected by the Patwaris and in some temporarily settled areas the data is collected by Chowkidars; See Blyn(1966: 45).
 6. For these comments see (a) Estimate of Area and Yield of Principal Crop in India 1940-41; p.48; (b) R.S. Finlow in Royal Commission on Agriculture in India, Evidence taken in Bengal Presidency; Vol. IV, p.14; Bombay 1927; (c) Final Report of the National Income Committee, February, 1925; p.25.

areas. The revenue remission in those areas depended on factors other than the crop situation.

In Bihar, the crop statistics followed the following course ⁷.

"The Chowkidar gives a rough idea of acreage and production to the thanadar. The thanadar on receiving such statement from the village Chowkidars in his thana takes some sort of an average of them, not necessarily the arithmatic mean, using his own knowledge about the conditions of the standing crops which average was submitted to the District Officers through the sub-divisional officers. The District Officers similarly averaged the statement made by the thanadars. The average thus arrived at, which could be modified at the discretion of the District Officers, was being passed on to the Director of Agriculture....."

These Chowkidars, the primary reporting agencies, were low paid, ill trained and lacked orientation for his job. Further, as noted earlier, this job fell on him in addition to his official job of policing. In Bihar these Chowkidars were mostly the lowest castes. According to the government officials they were also either criminals or had criminal connections ⁸. Their low and uncertain income made them dependent on the rural gentry. Under the situation it is likely that his reporting of crop and production as well as the normal area of each crop, which he is supposed to estimate, would lack accuracy ⁹.

It would, however, be too fragile an argument to say that the biases in the reporting of crops lies solely with the lowly Chowkidars. On the other hand, a more plausible argument could be that with their intimate knowledge of the local condition, these native reporters were fairly accurate estimators of the crop condition. As we shall see below, the sources of biases in crop estimation lies elsewhere and at different level in the colonial administration.

Crop statistics in the British India were not accurate no doubt. The Indian Council of Agricultural Research found that in the period between 1944-49, the rice output in Bihar was under-estimated to the extent of 30 percent; and the major contributor to this error was the acreage estimation ¹⁰.

7. Report on Crop Survey in Bihar (1944 to 1948) Patna, Bihar, 1950; p. 6.

8. The official documents have frequent reference to this. For one specific comments on Chowkidar and the Chowkidari system by an anonymous observer, See, C.R.M. (1879:337-347)

9. In Bengal at least Islam has shown how the official rule book added to the confusion. He pointed out two specific types of confusions created by official rule books: (1) By not specifically assigning to the chowkidar the task of data collection; (2) Further, by asking the later to estimate 'normal area' under each crop in his region, but without clearly defining what it meant by normal area.

10. Blyn, (1966:12). He quoted from the Indian Council of Agricultural Research, Sample Survey to the Estimation of Yield of Food Crop, 1944-49, 1951, pp. 39-42.

In 1944-45 P.C. Mahalanobis made a detailed survey of rice and few other crops in Bihar ¹¹. It was found that (1) the official estimates of areas under both Bhadoi and Aghani paddy given by Season and Crop Reports were underestimates; (2) the areas under the Aghani paddy given by Settlement Reports were underestimates; but the areas under Bhadoi paddy from the same sources were overestimates. (3) For cash crops such as sugarcane and potato, the official estimates were 91 percent and 115 percent respectively of the Mahalanobis estimates. But the areas reported by the Settlement Reports were underestimates for all crops ¹².

The Mahalanobis effort was followed by plot-to-plot survey by the Bihar Agricultural Department for three consecutive years from 1945-46. It was found that (1) the official estimates of area under foodgrain were mostly underestimates which ranged from 30 percent to 8 percent, except in case of area under barley in 1946-47 and 1947-49; and (2) the official estimates of cash crops such as sugarcane, potato and tobacco were overestimates.

These comparisons reveal only a haphazard picture, with no definite trend of either overestimation or underestimation.

The standard yield and condition factor are the two other most important elements in the crop estimation procedure. The standard yield multiplied by condition factor gives the average yield which is then used to estimate output by multiplying it with the area under crop. The standard yield is defined as "the average yield on average soil in a year of average character" ¹³. It is, the Estimates of Area and Yield of Principal Crops (henceforth Estimates) says, the frequently recurring normal crop in an area in a normal year ¹⁴. The average envisaged in the definition is not the mean, but the mode.

11. Report on Crop Surveys in Bihar (1944-1948), 1950, Patna, Bihar, 1950; p.92, 102 and 103.

12. For limitations of statistics of the settlement report, see Islam, (1978).

13. The definition of standard yield of principal crops in India are worth quoting here: "Normal crop is that crop which past experience has shown to be the most generally recurring crop of the local area; the crop which the cultivator has a right (as it were) to expect, and with which he is (or should be) content, while if he gets more he has reasons to rejoice, and, if less, he has reasons to complain", or, in other words, it is "the figure which, in existing circumstances, might be expected to be attained in the year if the rainfall and seasons were of a character ordinary for the tract under consideration, that is neither very favourable nor the reverse". Estimate of Area and Yield of Principal Crops in India, 1916-17; p.21 and also in 1940-41.

14. Estimate of Area and Yield of Principal Crops in 1916-17 p. 21. See also (1) Royal Commission on Agriculture in India, (Abridged Report) Bombay, 1928; p.608; and (2) Blyn (1966:24).

The condition factor is "a certain number of areas to represent the normal outturn, and estimate the outturn of the year of report as so many annas higher or lower than that of normal".

The Estimate prescribed the crop cutting method for estimation of the standard yield ¹⁵. The Estimate elaborates the method thus: Usually 1/10th of an acre of the tract where crop is being estimated is selected by a district officer, who then cut the crop, thrash it and weigh it to estimate the yield. The process is usually repeated twice or thrice. This method has, in fact, a number of drawback as has been pointed out by a number of official sources (Hubback, 1921). (1) The coverage and the number of experiments were usually small ¹⁶.

2.2 Biases in Estimation

In the economic literature the source of this bias has sought to be attributed to the subjectivism involved in the selection of sample fields by the primary data collecting agents like the lowly chowkidars in the permanently settled areas. The other source of bias was said to be the inadequate number of experiments carried out by the official to estimate the yield rate. The superior officers did not stay in the field long enough to carry out enough number of experiments to neutralise the personal elements in the selection of the field.

But do these observations explain everything? Consider, for example, the data given in the Table 2.1.

The Settlement Report virtually reiterates the observations mentioned earlier on the crop cutting procedure and number of samples, the two possible sources of biases in its crop estimation ¹⁷. The Report pointed out that the areas selected by it for crop estimation include areas which were subjected to chronic crop failure as compared to that of Stevenson - Moore. This crop cutting experiment failed to take account of the failure of the crop sown and, therefore, tended to overestimate the yield rate. The Report pointed out

15. In Bihar there is one indigenous method of crop estimation known as Danabandi (apprisement) system. It is used to estimate the rent. Under this system the tenant cut the thinnest portion and landlord the heaviest portion of the crop of the area, mix the two crop and weigh it to estimate the yield and fix the rent. See J.A. Hubback, Sampling For Rice Yield in Bihar and Orissa, Bulletin No.166, Pusa, 1927,

16. See (1) Report of the Indian Economic Enquiry, Calcutta, 1925; Vol 1 p.19. (2) First Report of the National Income Committee, April 1951, p.19; (3) D.L. Majumdar, Draft Report on Paddy and Rice, 1939; pp. 83-84. (4) Final Report of the National Income Committee, February, 1954; p.27.

17. Report on the Survey and Settlement of Gaya District; p.83.

that the difference between its estimate of yield rate and that of Stevenson-Moore's was due to this failure to take account of the failed portion of the crop in the sample fields ¹⁸.

Table 2.1
Estimated Yield Per Acre./in the specified years

Estimated by	Year	Paddy				Rabi			
		I	II	III	IV	I	II	III	IV
1. A.P. Macdonnell	1876		12			10			
2. G.A. Grierson	1893	10.8	8.6	7.2	6.2	5.1	4	4	3
3. C.J. Stevenson	1895	14.15	12.93	10.96	8.63	8.61	7.67	7.67	4.31
— Moore									
4. Estimates from crop forecast)	1912/13		15			12			
5. Crop Cutting)	1916/17	15	13	12.5	12	10.5	10	10	10.5

Note : I : Jahanabad, Arwal and parts of Daudnagar thanas.

II : Nawada, Pakribarwan, Rajauli, Aurangabad and parts of Daudnagar thanas.

III : Sherghatti and Barchetti thanas.

Source : Report on the Survey and Settlement of Gaya District; p. 83.

The Settlement Report, however, does not make any attempt to explain the difference between yield rate estimated by it and the rate estimated by Grierson, or for that matter, the difference in the estimation made by Stevenson-Moore and that by Grierson. In the late 1880s, Grierson enquired into the conditions of Gaya peasants as a part of an overall study into the conditions of the poorer classes of this country and concluded that 75 percent of the holdings in Gaya did not support their cultivators ¹⁹. In 1893, after the publication of Grierson's Note, C.J. Stevenson-Moore,²⁰ at the behest of the Government of India, undertook a study of the same region and concluded that only 45 percent, and not 75 percent as asserted by Grierson, of the holdings in Gaya district were unable to support their cultivators. Stevenson-Moore univocally admitted that the differences in their findings is pegged on their differences in the estimation of holding size and yield

18. Report on the Survey and Settlement of Gaya District; p.83.

19. Grierson (1883 :95)

20. See, C.J. Stevenson-Moore, Report on the Material Condition of the Small Agriculturists and Labourers in Gaya, Calcutta, 1899, especially p. 1 and 31. The Report contains details of the crop cutting experiment conducted by the author.

per acre of the crops (Table I). The Government naturally accepted the findings of Stevenson-Moore and rejected Grierson's. Incidentally, there was nothing in Stevenson Morre's Report to show that his method of estimating the yield per acre was more reliable than that of Grierson.

One other example can be cited before making any definite observation about the method of yield rate estimation in Bihar and their reliability. This time it is from Sitamarhi sub-division of Muzaffarpur district in the second half of 1890s at the time of the land settlement of the sub-division and the settlement officer here incidentally was C.J. Stevenson-Moore ²¹. Stevenson - Moore writes :

"The produce per bigha has been invariably stated by the raiyats to be from 5 to 8 maunds at the most. This is absurd considering that the incidence of rent alone sometimes amounts to Rs.5; and expenses of cultivation varies from Rs. 1 to Rs. 2.5 From careful inquiries made the actual produce of land appears to be from 10 to 20 maunds a bigha according to the quality of soil, the average being 15 maunds a bigha".

The average reported by other assistant settlement officers working under Stevenson-Moore varied between 14 maunds to 17 maunds. Stevenson-Moore, who was then the settlement officer of Muzaffarpur finally accepted 15 maunds of cleaned rice as the average outturn. Earlier the Department of Land Records and Agriculture had rejected the results of crop-cutting experiments made between 1894-97 by the same set of settlement officials under Stevenson-Moore because it considered their results of 16 maunds of un husked rice i.e. 8 to 10 maunds of cleaned as yield per acre too low ²².

In Bihar, therefore, the elements of personal choices in the crop-cutting method of estimation of yield per acre existed. But it would be improper to situate these biases in lowly Chowkidars or even from the manner of selection of sample field or by the number of experiments carried out by the field officials. The probability of bias was no less at the upper echelon of the colonial administration who often altered the estimation made by officials lower down and it is difficult to argue that such changes were made solely on considerations of statistical accuracy.

Besides this, one has to take cognizance of another aspect of the estimation process which is perhaps specific to the Bihar situation. In Bihar the random sampling method

21. C.J.Stevenson-Moore, Final Report on the Survey and Settlement operations in the Muzaffarpur District, 1892 to 1899, Patna, Bihar, 1861; pp. 291-293.pa

22. C.J. Stevenson-Moore, Final Report on the Survey and Settlement Operation in the Muzaffarpur District, p. 291.

for yield estimation, as suggested by the Agricultural Department and by the experts like Hubback (Hubback, 1921), could not be started before 1916-17²³. But even in 1916-17 the number of sample tests etc. carried out was too small to be incorporated in the Estimate Report of that year. In the years subsequent to that also the results were unsatisfactory so that no revision in the yield rate in Bihar was possible for long. Hubback tried some experiments to perfect the method. But no effective infrastructure could be evolved to carry on the necessary experiments for an adequately scientific method of estimation till 1940-41, which is incidentally the terminal year of our study²⁴.

In Bihar, as a result, the yield per acre was adjusted only occasionally despite the generally accepted suggestions made repeatedly in the Estimate that it should be changed at intervals of five years. For example, the standard yield per acre of the winter rice was lowered from 1,234 pounds per acre to 900 pounds only in 1920-21; and for the autumn rice from 823 pounds per acre to 741 in 1921-22 and then maintained unaltered. The yield rate of linseed was decreased from 492 pounds per acre to 370 pounds much later in 1925-26 and the rape and mustard was increased from 492 pounds per acre to 576 pounds in the same year in 1925-26. For linseed the next revision was in 1928-29 when it was raised to its earlier rate of 492 pounds per acre and rape and mustard was reduced to its 1924-25 level of 492 pounds per acre. The jute rate was raised from 1200 pounds per acre to 1333 lbs. In 1932-33 the yield rate of sugarcane was increased for the first time from 2460 pounds per acre in 1936-37 to 2912 pounds for North Bihar and then reduced to 2240 pounds in 1937-38²⁵. For the Chota Nagpur area a separate sugarcane yield rate was given from 1936-37. In 1937-38 the rate was reduced from 4480 pounds to 3136 pounds. These cases show that the adjustment in yield rates was hardly a regular feature in Bihar.

Under this situation the third estimator i.e. the 'annawari condition' assume greater importance. But as things stood at that time, this estimator was a visual one and, as Islam

23. Quinquennial Report on the Average Yield per Acre of Principal Crop in India, 1916-17, Calcutta, 1919; p. 8.

24. See various Estimate Report, but especially (a) Quinquennial Report On Average Yield per acre of Principal Crop in India for the period 1926-27, Calcutta; p.1. (b) Estimates of Area and Yield of Principal Crops in India, 1940-41, 43th issue pp. 48-49.

25. Bihar was separated from Orissa in 1936. The Yield rates before that are applicable to both Bihar and Orissa.

argued, all the arguments about the subjective elements affecting estimation of the earlier estimators were all the more applicable in this case (Islam, 1978 : 32).

The first difficulty in this case arises from the interpretation of the concept itself. In some places 16 annas meant a bumper crop, and in other areas, it meant the normal crop. This makes the calculation of the condition factor difficult.²⁶ Further, the number of annas taken to mean normal crop varied from 12 annas to 16 annas.²⁷ In Bihar, for example, the normal crop is expressed by 12 to 14 annas: actually in 12 district, it was 12 annas; in 7 districts 13 annas and in 2 districts it is 14 annas.²⁸

Various practices in the calculation of the anna estimates created problem (Blyn, 1966 : 48). For example, the anna estimates were expressed usually to their nearest anna; e.g. 8 annas for 8.5. Usually there is preference for even number (Bowley and Robertson, 1934 : 37). But this meant that the nearest anna would be out by as much as 5 anna, which is 6 per cent in 8.5 anna and 3 percent in 16 anna. Blyn, however, pointed out that this tendency did not affect the actual estimation as it tended to average out the biases because of the variation in the actual practices of estimation from area to area.

The other source of error is the "pessimism" of the village officials, whether it is the Patwari or the Chowkidar. These officials tend to overestimate in bad years and underestimate in good year. Blyn, however, tends to discount this as a source of bias in crop statistics. On the contrary, he argues, this tendency on the part of village officials acts as a sort of moving average and tends to tone down fluctuations.²⁹

4.3 Literature on estimation process

These possible sources of biases in the crop statistics of British India have been the focal point of a wide ranging debate among the economic historians which has its ramification both outside and inside this country. In his study of Bombay and Punjab, Heston (1968 : 303 - 332) argued that the initial upward and later downward tendencies

26. See Royal Commission in On Agriculture. (Abridged Report) Government Central Press, Bombay, 1928; p.608.

27. Estimate of Area and Yield of Principal Crops in India, 1916-17; p.21; also Royal Commission on Agriculture in India, 1938.

28. See Royal Commission on Agriculture in India, 1928 and also, Final Report on the National Income Committee, February, 1954. In Madras, Bombay, Bengal and Assam, the normal crop is 12 annas; in United Province, the Punjab and North West Frontier Province, 16 annas; in the Central Provinces and Bihar 13.3 annas.

29. Blyn (1966:49) Also, Final Report of the National Income Committee, 1954, p. 27; Royal Commission on Agriculture in India, 1928, p. 608.

in the crop production in Blyn's analysis was the working of the condition factors, which, Heston argued, was more often than not manipulated under political pressure. Dewey (1974) argued that in Punjab the estimation of both the yield per acre³⁰ and the condition factors were biased and these biases have affected Blyn's analysis also. In his critique, Mishra (Mishra, no date; Desai, 1978) has exposed the weakness of these arguments, ultimately underscoring the validity of Blyn's analysis³¹.

In the case of Bihar, therefore, one can summarise the specific feature of the data collected thus: The Chowkidar or the Patwari in Bihar, as possibly elsewhere, may not be without biases. Their ideas about crop situation may have been surrogate to the idea of the rural gentry. But their native instinct about the local agricultural situation and their innate random method of estimation tends to neutralise, as Blyn would argue, the biases in their estimation to a large extent. Then the upper level of beurocracy had all the wherewithals to adequately check over their estimates, as we have shown in our discussions of the estimation of the yield rate earlier. The higher officers have invariably corrected the yield rates upward³². It is, in fact, these higher officials whose estimation had often been affected by considerations other than the accuracy of estimation. In case of Bihar (and till 1935 in case of Bihar and Orissa) at least, it should be noted in addition that the yield rates remained virtually unchanged. And as regards condition factors, our detailed tabulation shows two things clearly: (1) The condition factor of the non food grain crops were generally higher than the food crop, except barley. (2) Further, there was no definite pattern in the change in the condition factor from one year to another till 1930s which therefore tend to average out the biases arising out of the subjective factors in the estimation by village officials. (2) From the thirties there was generally downward tendencies, especially in case of the non food crop.³³

All these subscribe to the Blyn's (1966 : 54 - 56) general argument that the crop statistics of British India by and large remains unaffected and is useful indicator .

30. Walter Neale also suggested the possibility of political pressure on crop estimation, See Neale (1962:45).pa

31. See also in this connection, Bagchi (1972:93-111)

32. For how Finlow tried to influence average output estimation in Bengal, See Report of the Bengal Paddy and Rice Enquiry Committee, Vol. II, Replies submitted by H.P.V. Townsend, Commissioner, Burdwan Division; p. 18.

33. See in this connection Saith (1978) quoted in Mishra (no date).

Since his argument is extremely relevant to our work, we quote him here in some details from his works:

"Whatever the error, however, it is possible that the measured trend rates represented the actual change with perfect reliability. Three cases of them are conceivable. The first would be if the percentage of error or underestimation remained constant over the period In this case the height of the trend line would be affected, but not the rate of change. The second would be the case where upward and downward actual fluctuation were moderated to have found unaffected by the reported statistics. The third case would be where the percentage error fluctuated over time in a random fashion above and below again leaving trend unaffected. It is possible, however, that the fluctuation in error was not self-cancelling overtime, and in this the extent of error may have an appreciable effect on the trend..... Over a half century period, an error distribution of the type appears quite unlikely".

In British India, Blyn says, in fine, it does seem that neither the degree of error, nor the likelihood of error distribution making for maximum biases, was sufficiently large to significantly effect the British India trend rates for aggregate crops over the whole period.

The approach adopted by Blyn has been adopted by many. Thomas and Shastry (1939 : 39) said that the errors were more or less systematic; the data, they added, might be inadequate for estimation of food availability but helpful for time series analysis. Panse (1952) argued that the primary reporting agencies had a tendency to overestimate in bad years and underestimate in good years and thus averaging out the biases over long period. Mukherjee (1965 : 21) agreed the crop statistics can be used for long term analysis. Subramaniam pointed out that the error of the statistics were systematic and have strong downward bias (1945 : 25 - 26). It would, therefore, affect the height of the curve but not the rate of change. Islam accepted these arguments for crop statistics of Bengal till 1940-41 (Islam, 1972 : 37). He, however, pointed out that the estimation after 1941 was substantially different from estimation before 1941.

2.4 On Islam's Estimation Method

Since Islam's study is very similar to us it might be useful to discuss his work in a little bit more detail and point out our differences. Islam's study covers the whole of Bengal which was part of the erstwhile Bengal Presidency and his period is 1920 to 1946. Our study, on the other hand, covers Northern districts of Bihar (north of the Bihar plateau) and covers a longer period of time from 1892 to 1941.

Our choice of 1892 as the starting year is dictated by the availability of data. This is the year from which systematic crop data with districtwise break-up began to be

published for Bihar. Choice of 1941 as the end terminal year is affected by the consideration that it marks the point of virtual discontinuities in the data collecting system in Bihar under the colonial rule. Through the experiments of Mahalanobis ³⁴ in 1944 and that by the Agricultural Departments ³⁵ in 1945-46 to 1947-48, a new and more scientific system of data collection and estimation procedure based on the random sampling system was introduced in Bihar in the 1940s. This makes the crop data collected till 1941 and that after 1941 qualitatively different and the year 1941 a virtual point of discontinuation in the time series information on Bihar published by Season and Crop Report as also other official publications.

Our other point of difference is the approach in the method of revision of crop statistics. Islam's whole argument is based on his two observations (Blyn, 1966 : 37) : (1) The crop acreage of Bengal is on the whole underestimate. (2) But in case of some individual crops there are over estimation. This prompted Islam to calculate the correction factor by using the one point estimation made by the Ishaque Report as the base, supplemented by the sample surveys and District Survey and Settlement Reports and then revise the entire series of crop statistics from 1920 onwards upto 1946 with the help of this correction factor. ³⁶

We do not find it feasible to follow Islam for the following few reasons: First our study covers a longer period as noted earlier. Second, in our case there is no Ishaque type plot to plot survey during the period of our study that would have enabled us to calculate the correction factor with reasonable reliability. As mentioned earlier, there are two Ishaque type intensive study reports on crop statistics in Bihar in the later half of 1940s which fall outside our terminal period of 1941. Further our submission in this respect is that it is not logically very sound method to calculate 'correction factor' on the basis of any one-point study at a period which falls outside the period of our study and then use that ratio to upgrade a historical series which goes as far back as to 1892. Also, and more importantly, our primary objective is to find out the trend of agricultural production in the North Bihar in the late nineteenth and early twentieth century. Over such a long

34. Report of the Crop Statistics in Bihar (1944 to 1948)

35. Report of the Crop Statistics in Bihar (1944 to 1948)

36. Islam's main basis of calculation of correction factor is "Agricultural Statistic by Plot to Plot Enumeration in Bengal", 1944-45, Calcutta, 1946, popularly known as the Ishaque Report, supplemented by district survey and settlement reports, and the sample survey by the Indian Statistical Institute.

period, as we have pointed out earlier in this chapter, many of the biases and deficiencies in data collection tend to average out. Only plausible question that can be asked in this respect is that this might affect the calculation of availability of food which we would try to estimate in the next chapter. Our reaction to this question at this stage is that the study of famine, drought and other calamities that visited so frequently this part of the Bengal Presidency during the colonial period enables us to underscore far more effectively the problems of availability or, more appropriately perhaps, the non-availability of food grain to the people than through adjustment of crop statistics.

We have therefore decided to follow Blyn's argument about the biases in the crop data more than anybody else in our attempt at using crop statistics in analysing the trend of agricultural production in North Bihar during the colonial period without any Islam-type adjustment.

2.5 Coverage of the study

Our area of study is North Bihar. Till 1911 Bihar was part of the erstwhile Bengal Presidency. As we noted earlier, in April 1912³⁷ the territories of Bihar and Orissa was made separated from Bengal and in 1935, Orissa was separated from Bihar and the modern state of Bihar was born. This administrative adjustment, however, does not affect our geographical coverage of North Bihar. In geographic terms North Bihar in our case means Bihar plains i.e. by and large, the province of Bihar without the southern plateau region. The name of the administrative division and districts falling within this region are as follows :³⁸

Division	District
1. Patna Division	Patna, Gaya and Shahabad.
2. Tirhut Division	Saran, Champaran, Muzaffarpur, and Darbhanga.
3. Bhagalpur Division	Monghyr, Bhagalpur and Purnea.

2.6 Data sources

For the district level crop statistics on Bihar we have drawn information from Agricultural Statistics for the Lower Provinces of Bengal for the information till 1900. After 1900 our main source is the Season and Crop Report published by the Director

37. The actual date is April 13, 1912.

38. We have followed the survey and settlement report in spelling the names of places etc. in this work.

of Agriculture. These information were also published in the Agricultural Statistics of India by the Department of Commercial Intelligence and Statistics. Each issue of the Season and Crop Report contains (1) crop acreage for that year; (2) outturn for the current year and the previous year; (3) yield in percentage term for current year and the last year, (4) the condition factor and (5) the normal area cropped.

We have taken the acreage data for the current year and outturn and yield rate for the previous year from each issue of the Season and Crop Report.³⁹ So in the later two cases at least any subsequent revision in the data is taken care of. In the case of acreage data we have another source of checking them in Agricultural Statistics in India, which, in fact, found to be the same revised information published later in the year.⁴⁰

For the five years between 1905-06 and 1910-11 the outturn has been given in terms of percentage of normal yield of the district concerned instead of actual yield in tons as in other years. For these years the outturn has been estimated by using the normal estimation formula discussed earlier.

2.7 Classification of Crops

These crops can be classified either as commercial and non-commercial or as food crops and non-food crops. In the context of the North Bihar rural economy during the colonial period specially, the commercial and non-commercial classification poses problems of decision. For example, the food crop like wheat is produced primarily for marketing by the mainly rice eating poor cultivators of North Bihar. Further, exports were inadequate measure of commercialisation, as Blyn has pointed out: e.g. while only 1 percent of rice was exported almost a quarter of its output went to commercial establishment for milling. The gross village retention of these crop for seed and other purposes were also very high (Blyn, 1966 : 80; Islam, 1978 : 56).

Classification in terms of foodgrain and non-foodgrain is therefore, more meaningful in this context. In case of such classification the foodgrains would include bulk of the crops included in this study : eight out of thirteen crops except Sugarcane, Indigo, Jute, Til and Rape and Mustard. This classification enables as to obviate the difficulties mentioned above in connection with the commercial-non commercial classification.

39. Season and Crop Report follows agricultural calendar, i.e. July to June; and Agricultural Statistics in India follows Calendar year, i.e. January to December.

40. See on this Islam (1978 :45)

The conclusions of this chapter can thus be summarised :

1. The crop statistics during the colonial period is not strictly objective due to an inadequate system of data collection and also estimation process.
2. It affected the calculation of availability of food. But it can be used to find out the trend rate of the agricultural production for over such long period as fifty years. Over such long period the biases tend to average out.

Chapter III

TRENDS OF ALL CROPS, FOOD CROPS AND NON-FOOD CROPS

In the last Chapter we discussed the sources of the crop data of Bihar during the colonial period and their biases. In this chapter we will be using these crop data subject to the limitations already mentioned, to analyse the pattern of agricultural growth of the three divisions of North Bihar from 1892 to 1941.

There are number of studies of agricultural growth on the basis of the crop data during the colonial period¹. We have, for example, Blyn (1966) and Bagchi (1982) dealing with regional development from the all India perspective and Islam (1876) and Mukherjee² more specially focussed on the Bengal Presidency.

In his review of Blyn's work Dharm Narain summarised succinctly the basic thrust of Blyn's argument (Narain, 1967 : 359 - 360). Dharm Narain summarises Blyn thus: First, the all crop acreage grew at slow rate of 0.37; the population 0.67 percent. Second, the agriculture was, however, neither stagnant or unchanging. The change was reflected in the growth of non-food crop output at the rapid rate of 1.31 percent per year. Third, regionwise the slowest growing region was Greater Bengal and cropwise the slowest growing crop was rice though the stagnation affected other food crops also. The hard core of this malady resided in Bihar and Orissa region which was part of Greater Bengal. The slump in rice output was not only due to low yield per acre but also due to acreage shrinkage. Fifth, Blyn suspected the data on the yield rate and think that they were unreliable. But Dharm Narain argued that the yield data were not that bad. In fact, the decline in the productivity might have been not so much due to the faulty yield rate data as due to a) extant land tenure, on the one hand and, on the other, b) soil erosion, c) decaying irrigation supply and d) lack of manure.

Bagchi's framework is different though he incorporates most of these arguments. The focus of Bagchi's approach is colonialism and its impact on the regional development. His special emphasis on Eastern India, especially Greater Bengal, is subsumed within this broader frame of analysis.

1. For the complete list, see Bagchi (1982); Kumar and Desai (1982); also Social scientist (1984).
2. Mukherjee, S., Agricultural Marketing in a Colonial Setting; unpublished Ph.D. thesis.

Bagchi's entire approach is predicated on his observation that the Britishers on the one hand introduced private property rights in land, and abolished slavery, and on the other hand, helped strengthened the forces of pre-capitalist relations like debt bondages (Bagchi, 1982 : 87; 1972). On the one hand the market system was enforced from above and, on the other hand, the forces were released that strengthened the family labour based peasant farming.

These forms severely limited the possibilities of technological development.³ As a result, the growth in population resulted in the lower productivity. The transfer of inferior land to the foodgrain production, specially rice, further contributed to the lowering of productivity. Thus the factors that affected population growth might also have been the factors that lead to lower productivity. The neoclassical or neo Malthasian paradigm with its emphasis on the causal relationship between population growth and productivity cannot explain this complex pattern. In its stead, Bagchi argues, attention should be directed to the analysis of factors that explain irrigation decline, soil erosion, inadequacy of fertiliser problems, salinity question, pestilence et. al. This inevitably turns one's attention, says Bagchi, to the state policy and the State itself which is in this case the colonial State.

The scholars have hinted that the basic malady for depressed agriculture in eastern India particularly during the last fifty years of colonial rule might reside in Bihar-Orissa region. One of the important objective of this and the next chapter is to subject this observation into quantitative assessment. The second hypothesis to be enquired into here is the observation made by Bagchi on the behaviour pattern of area and yield per acre, the two determinants of agricultural output: "If acreage remained stagnant", Bagchi argues, "then productivity per acre would have declined a little less than 1 percent per year: if acreage increased by a significant percentage, then productivity per acre would have declined even more drastically" (Bagchi, 1976b : 45). The third hypothesis to be tested is that the non-food grain crop production grew faster than the food grain crop. The point to be particularly enquired into is whether it has been achieved through higher

3. Bagchi's theoretical framework has changed substantially from his Private Investment in India to his The Political Economy of Underdevelopment. For an understanding of this, see Bagchi (1976); also Bagchi (1982).

productivity per acre or through higher acreage. The fourth point of our enquiry is the availability of foodgrain to the people.

In this chapter we will discuss the growth patterns of aggregate all crops, food crops and non-food crop in North Bihar from 1892 to 1941. We also calculate the per capita availability of crops. In the next chapter we will deal with individual crops.

In this chapter we treat three broad categories - all crops, food crops and non-food crops separately. In each category we first deal with output, followed by our analysis of two of its determinants, acreages and the yields per acre. In each case we have first calculated the trend rate and then followed it up by the construction of index number for each quinquennium to find out the segmented growth of these three components.

The graphs of the moving averages for all the three series have been presented at the end.

In each table we have first given the rates of growth of North Bihar and its three component regions viz; Patna, Tirhut and Bhagalpur. Theoretically, a district level analysis might have been more revealing, but at this stage the data would have been unmanageable.

Following Blyn (1966 : 82) and Islam (1978 : 47) the trend rate has been calculated by fitting simple exponential equation of the type $Y = b^t$. The goodness of fit of these equations has been tested by calculating the t - values. As all these values were found significant they have not been dealt with in the text, but given in the Appendix.

For the study of the quinquennial growth we have constructed index numbers with 1920-23 as base. Islam has also used 1921-23 as base to construct his quinquennial index numbers. Blyn, however, followed a different course. Instead of constructing the trend rate for the entire series, Blyn first calculated crop trend rates for each overlapping segment of the series between population census years (e.g., 1891-01) and also between population mid-census years (e.g., 1896-06) and then took the average of the each of these different trend rates to get the rate for the entire series.

Fifty years of our study period have been divided into ten segments of five years each. A brief history of natural calamities having bearing on the crop production during the period is presented in the next page :

Table 3.1

<u>Period</u>	<u>Incidents</u>	<u>Area Affected</u>
1. 1892-93 to 1896-97	Famine: 1891/92 and 1896	Muzaffarpur, Darbhanga Monghyr, Bhagalpur, Purnea.
2. 1897-98 to 1901-02	Deficient rain throughout; droughts : 1899 and in 1901/02	Bihar
3. 1902-03 to 1906-07	Flood : 1902/03; Drought: 1904/05 and 1906/07 (moderate); severe flood: 1906-07	Saran, Muzaffarpur, Darbhanga, Purnea.
4. 1907-08 to 1911-12	Famine: 1907/08; 1910/11; 1911/12.	Darbhanga
5. 1912-13 to 1916-17	World War I; Defective rain throughout; crop damages: 1912/13 and 1914/15.	
6. 1917-18 to 1921-22	War; Famine: 1918/19; Influenza; "berri-berri".	Bhagalpur
7. 1922-23 to 1926-27	Post War recovery.	Bihar.
8. 1927-28 to 1931-32	Signs of depression.	Do.
9. 1932-33 to 1936-37	Depression.	Do.
10. 1937-38 to 1941-42	World War II; famine	Bihar.

3.1 Trends in all crop output

The combined trend rates of all crops of North Bihar and its three divisions of Patna, Tirhut and Bhagalpur have been shown in Table 3.2 along with the rates estimated by Blyn and Islam. The percentage shares of the three divisions to total output in North Bihar have been added in order to bring out the relative importance of these divisions in the regional agricultural production. In order to compare these rates of growth with population growth, the geometric mean growth rates of population of North Bihar and its three divisions have been calculated and shown along with all crop growth rates.

The all crop production in North Bihar shows negative rates for the fifty years taken up in our study. (Table 3.2). This findings accord well with the trend rates of Greater Bengal calculated by Blyn. The two trend rates calculated by Islam, from official series and from his adjusted series respectively, however, shows positive growth rates for Bengal. This suggests that the downward pull to the long term growth rates of Greater Bihar is at least partly due to Bihar. Since the Bengal Presidency also

Table 3.2
Trends in All Crop Output

Region	Annual Percentage Growth Rate		Percentage of total output
	Output	Population	
North Bihar	- 0.4	2.1	100.0
Patna Division	- 0.5	3.3	24.7
Tirhut Division	- 0.2	2.6	37.4
Bhagalpur Division	- 0.5	2.5	37.9
	<u>Blyn's Estimate</u>		<u>Islam's Estimate</u>
	1	2	3
	<u>(1920 - 1946)</u>		
British India	0.4	0.8	0.3
Greater Bengal	- 0.4	- 0.4	- 0.2
Madras	0.9	1.7	0.4
Punjab	1.6	2.2	1.3
United Province	0.4	1.02	0.3
Central Province	0.5	1.7	- 0.6
Bombay Sindh	0.7	0.7	0.8
Bengal	—	—	—
			0.9 (0.3)

- Note : 1. Blyn's and Islam's estimate have been added to the lower part of the table for comparison.
2. Figures in the bracket indicate rates of revised series in Islam's study.
3. In Blyn's series Nos. 1, 2, and 3 refer to 10 years reference decade rates, first 4 decade rates and last four decade rates respectively.

Source : Blyn (1966: 119);
Islam (1978: 50).

included the South Bihar plateau and Orissa, we cannot say that this downward pull for Bengal Presidency as a whole originated only in the negative growth rates of North Bihar.

The rates of decline is slightly higher in Patna and Bhagalpur division, both being -0.5 percent. The rates of Tirhut division is still lower (Table 3.2).

The index numbers of all crop output reveal a few further details of pattern of agricultural growth (Table 3.3). The first of these is that the all crop index declines in the second quinquennium. It is the period which falls immediately after the devastating famine of 1896 that affected virtually the whole of North Bihar (Table 3.1). Secondly, after the second quinquennium the crop index started rising reaching its peak in the five year period of 1907-08 to 1911-12 and thereafter falling, reaching its lowest level in the ninth quinquennium. In the last period it rose slightly. Further, the rates of decline, like the rates of increase in the pre-1907 period, are uneven.

The turning point in the agricultural production in North Bihar seems to be the half decade between 1907-08 and 1911-12. Till that period the crop production generally rose after a moderate dip in the second five year period despite frequent floods and droughts. But from the fifth quinquennium the crop output started declining and it continued through the depression till the second world war. Thus the inter-war period was the gloomiest period of the North Bihar agriculture.

In comparison, in Islam's study of Bengal which roughly covered the last four of our quinquennia shows a rising trend during the period though the rates tend to slow down towards the end (Islam, 1973 : 50). The comparison with Blyn's study of Greater Bengal which include both Islam's Bengal and our North Bihar becomes somewhat difficult because of different methods of calculation adopted by Blyn. However, both the two sets of decadal rates (first four and last four) calculated by Blyn for Greater Bengal show negative growth rates (Table 3.2).

The divisional rates show some clear features (Table 3.3). First, in the first four quinquennia both the periodic trend and fluctuation pattern in Patna and Tirhut conform to the North Bihar pattern. The fluctuation is, however, different in Bhagalpur. Second, after the peak is attained in the fourth quinquennium in Patna and Tirhut and in the fifth in Bhagalpur, the indices show steady decline in agricultural production with a minor exception in case of Tirhut Division between 1922-23 to 1926-27. Third,

Table 3.3

Index Number of All Crop Output

(base : 1921 - 23)

Year	1892-93	1897-98	1902-03	1907-08	1912-13	1917-18	1922-23	1927-28	1932-33	1937-38
	to	to	to	to	to	to	to	to	to	to
1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42	
North Bihar	95	84	111	133	123	101	100	93	79	81
Patna Division	89	82	117	118	118	102	96	87	80	67
Tirhut Division	86	79	93	151	108	99	100	97	82	73
Bhagalpur Division	109	91	125	124	142	110	103	93	74	99

Table 3.4

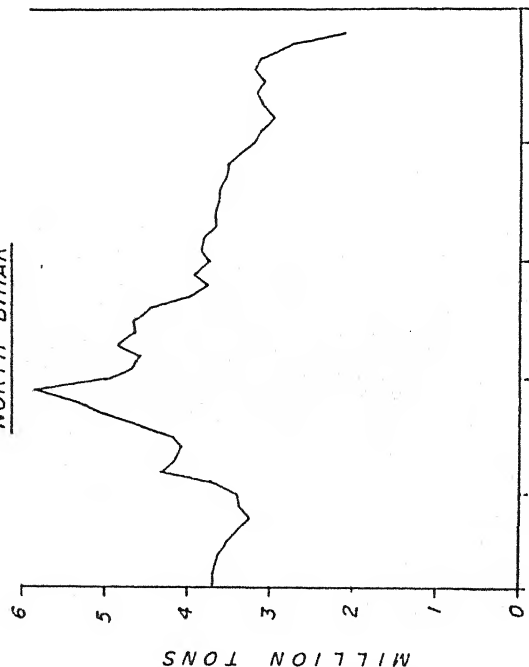
Index of Per Capita Production

(base : 1921 - 23)

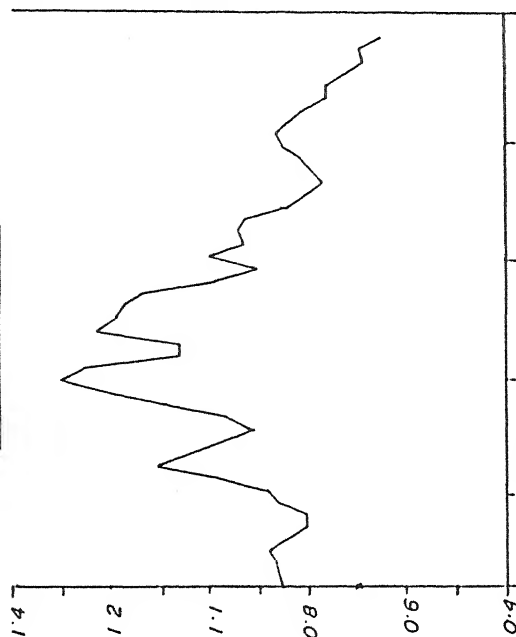
Year	1892-93	1897-98	1902-03	1907-08	1912-13	1917-18	1922-23	1927-28	1932-33	1937-38
	to	to	to	to	to	to	to	to	to	to
1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42	
North Bihar	96	87	111	128	117	102	97	88	84	73
Patna Division	82	79	112	113	115	101	95	81	71	51
Tirhut Division	90	84	96	144	107	99	100	94	75	60
Bhagalpur Division	70	60	78	119	130	106	95	86	66	53

OUTPUT OF ALL CROP
(FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE)

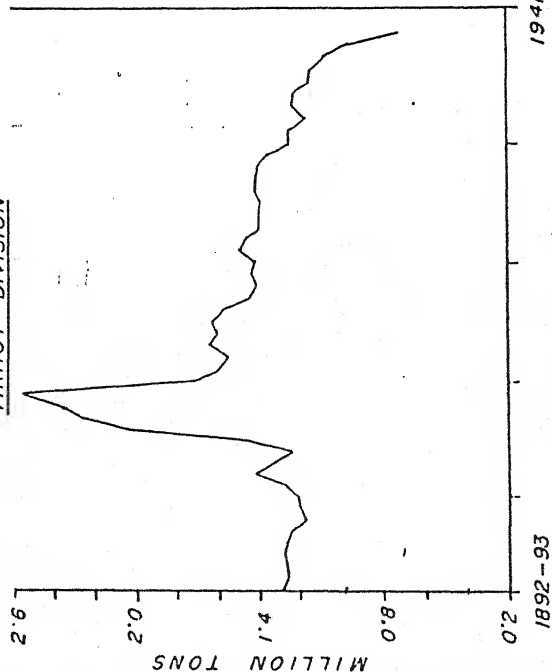
NORTH BIHAR



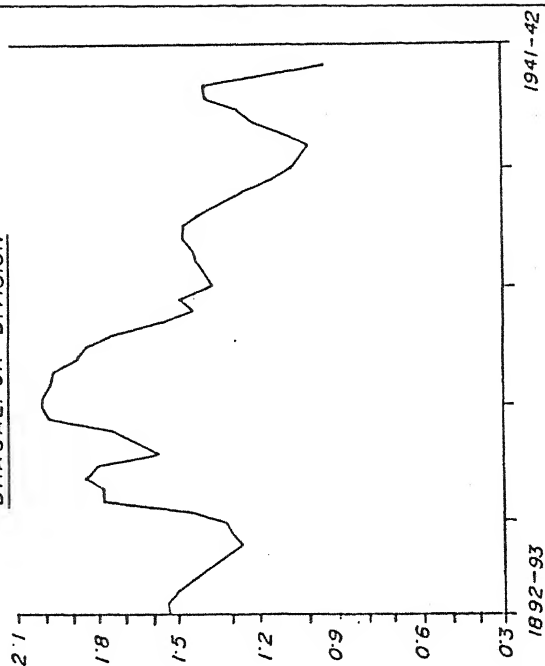
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



the rates of increase and decrease from one quinquennium to another throughout the fifty years of study are uneven.

The index of per capita crop production in North Bihar shows similar pattern as the index of crop production of North Bihar as a whole (Table 3.4). First, after a fall in the second five-year period, the index shows rise reaching its height in the quinquennium 1907-08 to 1911-12. It falls steadily after that.

In terms of per capita production no division conform to the provincial rates. For example in case of Patna and Bhagalpur divisions the index numbers after a fall in the period 1897-98 to 1901-02, reached their peak in the quinquennium 1912-13 to 1916-17 and then they fell steadily. For Tirhut division the turning point in the per capita crop production is the period between 1907-08 and 1911-12.

3.2 Trends in food grain output

Trends in foodgrain output of North Bihar are negative over the last fifty years of the colonial period. It fell little less than 1 percent annually (Table 3.5). Blyn's calculation of the annual percentage rate of Greater Bengal shows similar negative trend, the actual rate being 0.7 percentage, 0.2 percentage point less than ours. The study of Islam on Bengal proper shows positive growth for official series and no change for adjusted series. All these strengthens our earlier observation regarding the downward pull of North Bihar on agricultural growth of greater Bengal. The foodgrain output rates of the region seems to have exerted even stronger downward pull than the all crop output trend rates.

The divisional trend rates fluctuate around the North Bihar rates. The annual percentage growth rates of Patna and Tirhut division are somewhat less than that of North Bihar. But the trend rates of Bhagalpur far outweigh other divisional rates and also the trend rates of North Bihar and obviously pull the later down (Table 3.5.).

The quinquennial indices of foodgrain output show almost the same pattern as the all crop production. As for North Bihar, the index falls in the second quinquennium and then rises to reach its peak in fourth quinquennium. After that it falls steadily from one period to the other (Table 3.6). Further, the rates of increase or decrease between quinquennia fluctuate frequently.

Patna and Tirhut division indices by and large follow the North Bihar pattern (Table 3.5). After decline in the second quinquennium the indices show rising tendencies reaching their peaks in the fourth quinquennium. And then the indices fall steadily.

Table 3.5
Trends in Foodgrain Output

Region	Annual Percentage Growth Rate		Percentage of total output	
	Output	Population		
North Bihar	- 0.9	2.1	100.00	
Patna Division	- 0.8	3.3	28.94	
Tirhut Division	- 0.5	2.6	42.77	
Bhagalpur Division	- 1.6	2.5	28.29	
	<u>Blyn's Estimate</u>		<u>Islam's Estimate</u>	
	1	2	3	(1920 - 1946)
British India	0.1	0.6	0.3	
Greater Bengal	- 0.7	- 0.02	- 0.6	
Madras	0.4	1.47	0.2	
Punjab	1.1	1.9	0.9	
Central Province	0.4	1.2	- 0.2	
United Province	0.3	1.2	- 0.2	
Bombay Sindh	0.3	0.3	0.4	
Bengal	—	—	—	0.7 (0.0)

- Note : 1. Blyn's and Islam's estimate have been added to the lower part of the table for comparison.
2. Figures in the bracket indicate rates of revised series in Islam's estimate.
3. In Blyn's series Nos. 1, 2, and 3 indicate 10 years reference decade rates, first 4 years rates and last four years rates respectively.

Source : Blyn (1966 : 99);
Islam (1978 : 54).

Bhagalpur division shows greater fluctuations. It reaches the peak during 1902-03 and 1906-07 (Table 3.6).

The question of per capita foodgrain output is associated with the question of availability of per capita food. The availability of per capita food at any particular time depends on the net crop output (i.e. gross output minus crop preserved for seed etc.) and population and the net trade flow (i.e. trade net of export and import into the region).

Statistics of trade from the presidencies are available from 1871 onwards. But the information on trade from inland areas like Assam, Bihar, Orissa to the port cities are available only from 1925-26. Further, no data ~~are~~ available on the trade carried through train and river. ⁴

How does it affect the calculation of availability of foodgrain? It depends on the importance of trade in the rural economy in the region. The Bihar Banking Enquiry Committee ⁵ estimated that less than 2.5 percent of the total rice output were marketed in Bihar. Further, 22 million out of 32.5 million ordinary cultivators did not market their rice crop at all and the rest marketed an insignificant portion of their surplus rice in the village market. As for other commodities the percentages of export and import were the following: for Gram it was 8 percent and 2 percent respectively; for other crops 7 percent and 3 percent; for oil-seeds 25 percent and 6 percent. Only major export crops were jute, tobacco and sugarcane. These calculations were based on the trade statistics of 1917-25. But little have happened thereafter in the region to basically change the situation.

Two things are, therefore, clearly deducible from the above: First, only an insignificant portion of foodgrain was marketed in the rural area of North Bihar. Under the situation it can be safely assumed that at any particular year the foodgrain produced can be taken as a fair index of foodgrain availability to the people and the impact of the net trade on the food availability can be ignored in the calculation of the food availability.

Such a situation enhances the importance of population number at a particular point and its growth trend on the current availability of foodgrain per capita and its future prospect. On this North Bihar is adversely placed. Its trend of all crop production was -0.4 per cent over fifty years. Its population during the period grew by 2.1 percent (Table 3.2). The situation was worse in case of foodgrain. It had declined faster (at the

4. On this Islam (1979:56)

5. Report on the Bihar and Orissa Provincial Banking Enquiry Committee (1930: p. 59).

rate of -0.9 per cent annually) leading to quicker shrinkages of availability of food to its population (Table 3.5). The situation in the division is hardly any the better. In fact, it is worse in the division of Bhagalpur (Table 3.5.)

Table 3.7 gives the index of per capita availability of foodgrains for North Bihar as well as three divisions of Patna, Tirhut and Bhagalpur. North Bihar shows two specific features: First, the index of foodgrain availability falls in the second quinquennium to rise in the next reaching its peak in the fourth. After that it is steady decline touching its depth in the last quinquennium.

As for divisions, Patna and Tirhut reflect the provincial pattern not only in the fluctuations of food availability but also in the movement of rates. The division of Bhagalpur does not conform to this pattern. In this division the fluctuations in the availability of foodgrain as well as its rates of change are more irregular.

Thus the food availability is dependent on two immediate features: the foodcrop production and population growth. With the population growing faster than the food production and the food production actually declining, the food availability became poignantly smaller in North Bihar as the twentieth century rolls into its fourth decade.

The crucial period is the fourth and fifth quinquennia i.e. the period between 1907-1917. It is from this decade that the food situation became increasingly worse. Also, it is in this decade and the decade earlier that the famine and other natural calamities became increasingly frequent (Table 3.1). Incidentally, the Table-1 shows the list of only officially declared natural calamities. It does not show many localised floods and droughts which were not officially proclaimed to be so though its effect on the local population and production was no less calamitous.

Prior to the turing decade between 1907 and 1917 the two major reported calamities were 1896 famine and 1905 floods that affected different areas of North Bihar. The all pervasive famine in North Bihar in 1896 came as a sequel to series of inadequate and irregular monsoon in the preceeding years and the failure of August rain in that year. The crop was damaged. In the earlier years unabated export of grain from the presidencies despite production shortfall had dried up the food stock (Bhatia, 1967 : 238-259). The foodgrain became scarce; the local prices soared beyond ordinary means.

Table 3.6

Quinquennial Index of Foodgrain Output in North Bihar

(base : 1921 - 23)

Year	1892-93	1897-98	1902-03	1907-08	1912-13	1917-18	1922-23	1927-28	1932-33	1937-38
	to	to	to	to	to	to	to	to	to	to
North Bihar	95	87	115	133	117	102	93	90	70	59
Patna Division	89	84	120	122	118	102	95	85	73	62
Tirhut Division	86	79	98	156	111	101	100	97	70	63
Bhagalpur Division	114	102	134	113	126	102	82	86	67	51

Table 3.7

Per Capita Quinquennial Index of Foodgrain Output in North Bihar

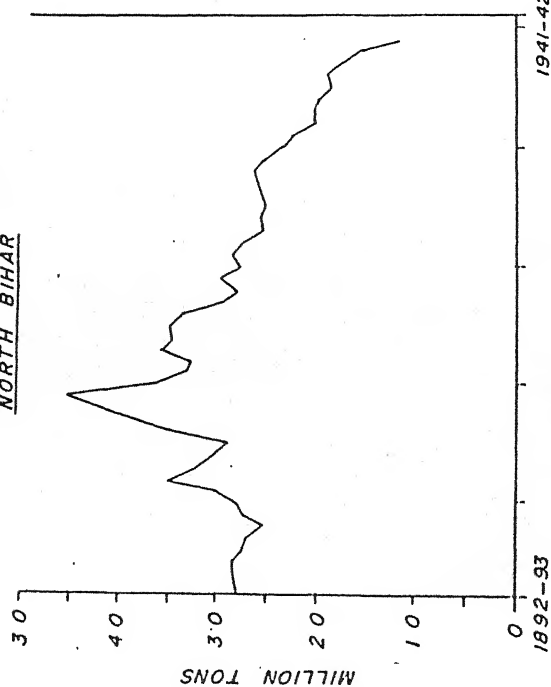
(base : 1921 - 23)

Year	1892-93	1897-98	1902-03	1907-08	1912-13	1917-18	1922-23	1927-28	1932-33	1937-38
	to	to	to	to	to	to	to	to	to	to
North Bihar	94	88	113	129	114	101	93	86	82	58
Patna Division	83	80	114	117	115	101	95	81	65	48
Tirhut Division	86	83	98	150	109	100	99	93	66	53
Bhagalpur Division	71	63	81	110	119	101	81	82	61	33

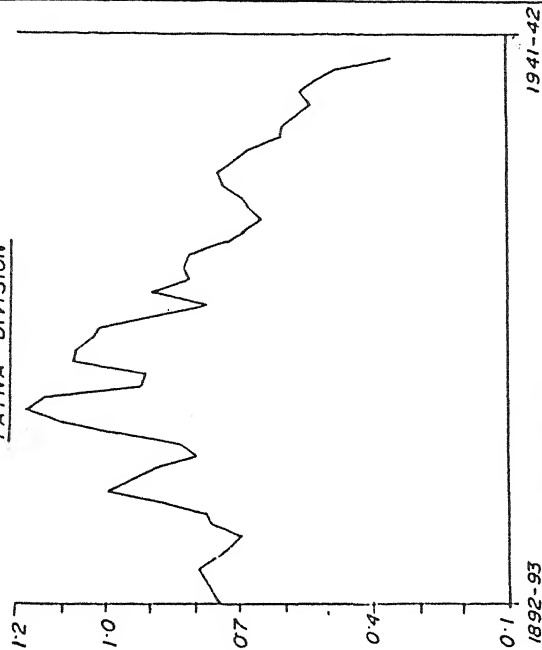
OUTPUT OF FOODCROP

(FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE)

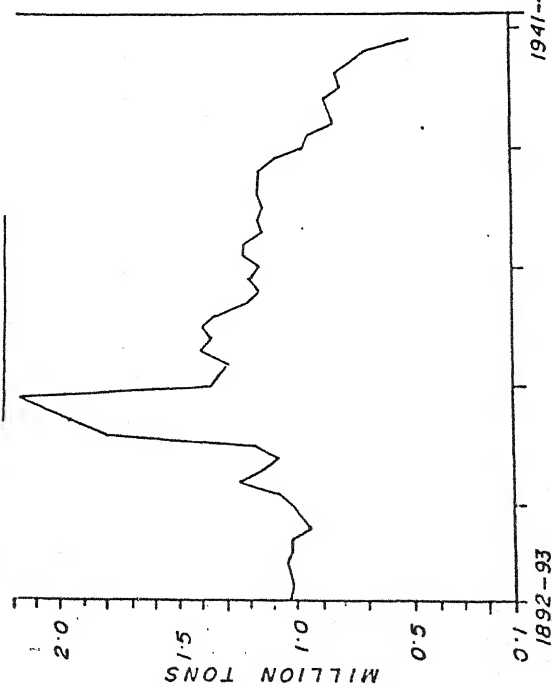
NORTH BIHAR



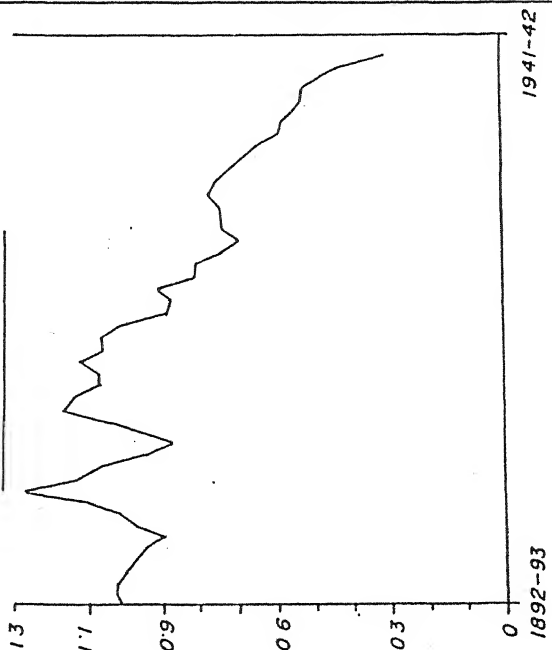
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



In Bihar in the Shahabad districts for example, the daily labours and the village artisans became jobless.⁶ The report from other districts echoes the same : The landless, the artisans and the tenants, particularly lower castes, thronged the poor relief centres. The reports from other parts of North Bihar showed the same pattern. The wages did not rise; the employment fell as the cultivators had no work to offer. The crime and desertions became rampant.

In 1905-06 the floods affected the Bhadoi crop and the Aghani crop in the Districts of Darbhanga. In 1908 and 1909 the crop was damaged again by drought in the district. The trade with adjoining districts had eroded the district's food stock. The price rose. All these affected the availability of food. In Darbhanga and Bhagalpur the landless labourer and the rural middle class were the hardest hit.⁷

The famine of 1918-19 was a repeat story except that it was more widespread and it was followed by widespread pestilence and disease that took heavy toll of life.⁸ Scant rainfall at the beginning, excessive rain in the middle and abrupt cessation at the end of the year destroyed the entire crop of the year for the whole of North Bihar, but specially in the district of Patna and Bhagalpur and also Monghyr.⁹ The influenza and 'beri-beri' broke out. But the local trading continued forcing up the prices of commodities in the local market.

This detour into the discussion of famine is not to reiterate the famine history of North Bihar, but to highlight two things: First the uneven rain, excessive rain and scanty rain, any one of these or all together can lead to drop in foodgrain production and consequent famine. And, second, the class most affected by this are the landless, the disposed peasantry and the vast poor tenants. Table 3.7 on per capita availability of foodgrain fails to bring these aspects out.

3.3 Trends in Non-food grain output.

The annual percentage growth rate of North Bihar shows positive trend (Table 3.8) as compared to the growth rate of food crop which is negative (Table 3.5). The

6. Appendix to the Report of the Indian Famine Commission, 1898; Minutes of Evidence etc; Vol-I. Bengal; London, 1879; especially pp. 29 to 75 and 165.

7. Answers to the Famine Enquiry Commission; Extract from the Government of Bihar, Revenue Department, Land Revenue Branch, File No., Fam.1/44, Deposit; December, 1945.

8. See the answer to the question No.1 of the Famine Enquiry Commission in the Extracts from the Government of Bihar, 1945.

9. Extracts from the Government of Bihar, December, 1945.

Table 3.8
Trends in Non-Foodgrain Output

Region	Annual Percentage Growth Rate		Percentage of total output	
	Output	Population		
North Bihar	1.0	2.1	100.00	
Patna Division	1.1	3.3	10.30	
Tirhut Division	1.1	2.6	19.63	
Bhagalpur Division	0.9	2.5	69.86	
	Blyn's Estimate			Islam's Estimate
	1	2	3	(1920 - 1946)
British India	1.3	1.6	1.1	
Greater Bengal	0.2	0.5	0.5	
Madras	2.4	2.9	1.3	
Punjab	2.4	1.7	1.8	
United Province	1.4	1.3	1.4	
Central Province	1.0	3.1	- 0.8	
Bombay-Sindh	1.4	2.8	1.8	
Bengal	—	—	—	1.5 (1.3)

- Note : 1. Blyn's and Islam's estimate have been added to the lower part to the table for comparison.
2. Figures in the bracket indicate rates of revised series in Islam.
3. In Blyn's series Nos. 1, 2, and 3 indicate 10 years reference decade rates, first 4 decade rate and last four decade rates respectively.

Source : Blyn (1966 : 112);
Islam (1978 : 61).

non-foodgrain trend rate of greater Bengal estimated by Blyn was much lower than the annual percentage rates of North Bihar. On the other hand, the estimation by Islam on Bengal, for both official and revised series respectively, were higher than that of North Bihar. Thus, at least in the production of non-foodgrain crops, the malady of greater Bengal agriculture seems to lie possibly more in the regions of south Bihar plateau and Orissa than in North Bihar.

As for divisions, both Patna and Tirhut divisions have identical growth rates and they are higher than the North Bihar rates (Table 3.8). On the other hand Bhagalpur division shows growth rate lower than the region and other divisional rates.

As for quinquennial indices of non-foodgrain crops (Table 3.9) North Bihar shows the following features: First, The period between 1911-12 and 1916-17 may be termed as the turning period for the cash crop production in North Bihar. Second, the second quinquennium, i.e. 1897-98 to 1901-02, the period immediately after the 1896 famine, is the worst five-year period for the cash crop production in North Bihar. Third, the series shows high degree of fluctuations : The rates of increase and decrease show high degree of variation.

Patna division has two high points of growth : one in the fifth quinquennium and the other in the ninth. Also, it has two lows in the second quinquennium and in the seventh quinquennium. The fluctuations are high. Tirhut division shows different pattern. Its high points are fourth and the ninth quinquennia. Its low points are the second and the sixth. In the pattern of variation in the indices, this division shows high degree of variation like Patna division and North Bihar. Bhagalpur division matches by and large with Patna division and North Bihar in the pattern of variation in indices. Only thing to be noted is that the fluctuations of rates in this division are higher than that of other divisions and the region.

A general observation can be made here about these quinquennial rates: First, the second quinquennium between 1897-98 to 1901-02, is bad for cash crop as well as for food crop production for North Bihar and all its divisions (Table 3.5 and 3.8). This five year period is the period of deficient rain and recurrent drought and the 1896 famine falls within this quinquennium, which adversely affected the cash crop also. (Table 3.1). Second, the fourth and the fifth quinquennia, i.e. the decade between 1907 to 1917, were good for the cash crop and the period between 1907-08 to 1911-12 for food crop

Table 3.9

Quinquennial Index of Non-Foodgrain Output in North Bihar

(base : 1921 - 23)

Year	1892-93 to	1897-98 to	1902-03 to	1907-08 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42	
North Bihar	90	69	88	123	135	106	118	97	-104	152
Patna Division	82	68	87	80	115	98	99	95	142	111
Tirhut Division	89	77	64	116	89	88	96	97	140	123
Bhagalpur Division	92	65	99	134	161	116	132	97	81	173

Table 3.10

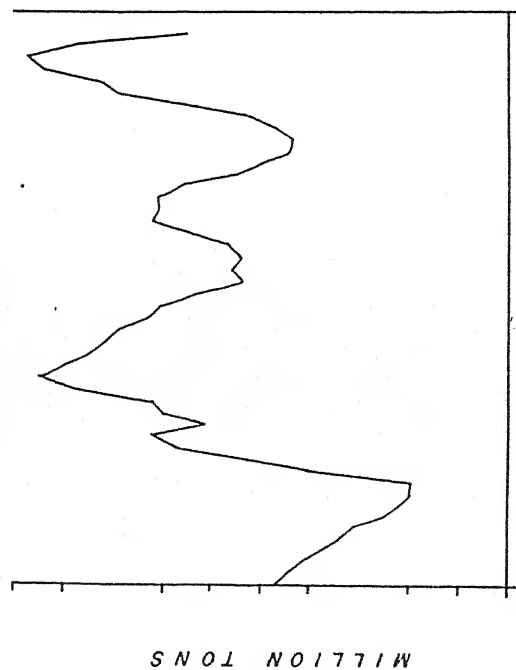
Per Capita Quinquennial Index of Non-Foodgrain Output in North Bihar

(base : 1921 - 23)

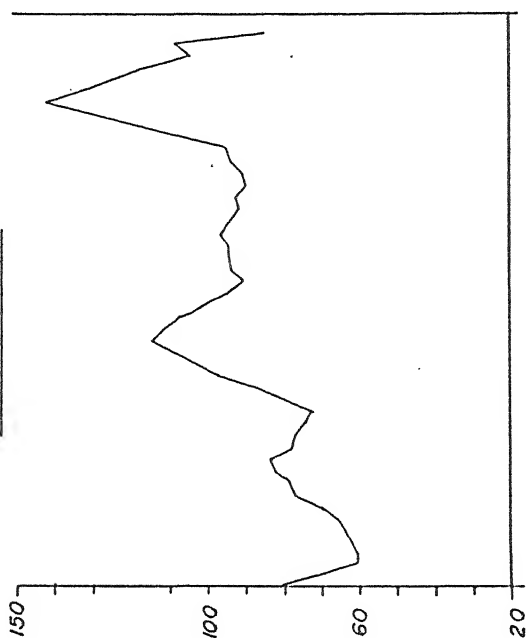
Year	1892-93 to	1897-98 to	1902-03 to	1907-08 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42	
North Bihar	107	81	96	121	137	111	123	99	95	160
Patna Division	79	67	89	81	115	99	101	91	131	88
Tirhut Division	124	94	77	93	91	95	101	100	153	119
Bhagalpur Division	66	47	68	149	170	125	142	101	85	123

OUTPUT OF CASHCROP FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE

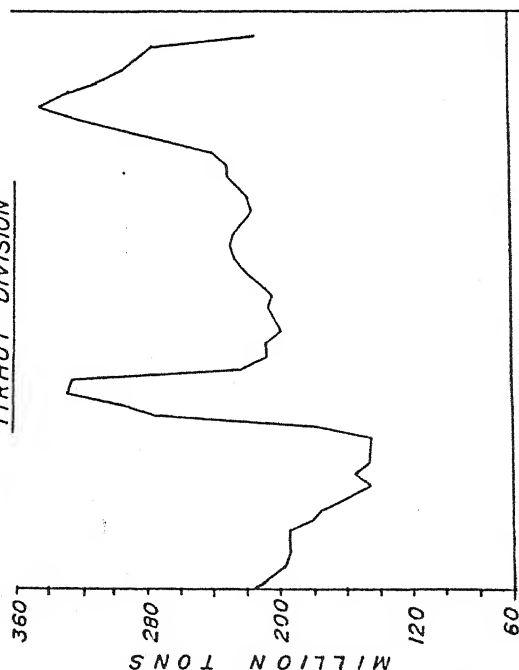
NORTH BIHAR



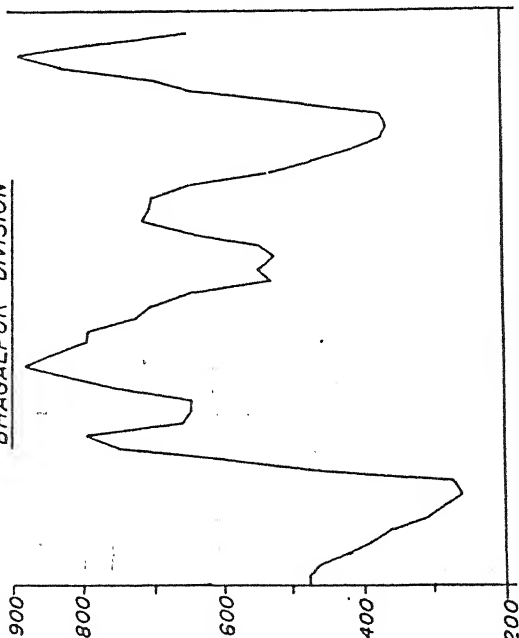
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



production in North Bihar and its divisions. The last decade of our reference period, i.e. between 1932-1942, is also good for cash crop production except for Bhagalpur division. Third, in the period between 1907 and 1917, the Indigo crop virtually fell out of production following the collapse of international indigo market with the discovery of synthetic dye and the sugarcane slowly crept into its place. Further, the depression seems to have less effect on cash crop production in North Bihar.

The per capita quinquennial non-food grains output in North Bihar (Table 3.10) shows two clear peaks: one in fifth quinquennium and the other in the tenth. The war time boom is higher than that between 1911-12 to 1916-17. On the other hand, it has two lows in the second quinquennium and in the ninth and the low in the second quinquennium is the lowest depth of cash crop production (Table 3.10).

The divisional rates do not conform to the regional pattern. In Patna division the index numbers fluctuated every alternate period reaching the highest peak in the ninth quinquennium. But in the tenth quinquennium it fell sharply again. The other two divisions show different pattern. Their only similarities are in the irregular variation in their indices and in the rates of change. These are the two division in which the jute crop and indigo (till 1910s in Tirhut division), constituted important components of cash crop which possibly explain their sharp fluctuations.

3.4 Trends in all crop acreage

The trend rates of all crop acreage in North Bihar in the period between 1892 and 1941 show a decline (Table 3.11). This decrease is a little less than the decrease in output. Blyn's estimate of trend rate of growth of area under all crop in Greater Bengal during the period shows all most no change. For the first four decades, however, Blyn's estimate shows slight negative growth rate for all crop acreage in greater Bengal. It is in the last four decades that the growth rates of all crop acreage in greater Bengal changed to positive in Blyn's estimates. On the other hand, Islam's study of Bengal proper from 1920 to 1945 shows positive trend in growth of all crop output for both the official and adjusted series (Table 3.11).

This, therefore, shows the downward pool of North Bihar in the growth of acreage under various crops in greater Bengal in the late nineteenth and early twentieth century. Prior to any definitive observation on the effect of this region on the agriculture

Table 3.11
Trends in All Crop Area

Region	Annual Percentage Growth Rate		Percentage of total output	
	Output	Population		
North Bihar	- 0.3	2.1	100.00	
Patna Division	- 0.2	3.3	29.6	
Tirhut Division	- 0.02	2.6	39.4	
Bhagalpur Division	- 0.8	2.5	30.9	
	<u>Blyn's Estimate</u>		<u>Islam's Estimate</u>	
	1	2	3	(1920 - 1946)
British India	0.4	0.6	0.3	
Greater Bengal	- 0.06	- 0.2	0.3	
Madras	0.3	0.5	0.2	
Punjab	1.0	1.8	0.4	
United Province	0.4	0.8	0.3	
Central Province	0.3	0.6	0.07	
Bombay-Sindh	0.4	0.5	0.4	
Bengal	—	—	—	0.9 (0.2)

- Note : 1. Blyn's and Islam's estimate have been added to the lower part to the table for comparison.
2. Figures in the bracket indicate revised series of Islam.
3. In Blyn's series Nos.1, 2, and 3 refer to 10 reference decade rates, first 4 decade rates and last four decade rates respectively.

Source : Blyn (1966 : 131-132);
Islam (1978 : 65).

Table 3.12

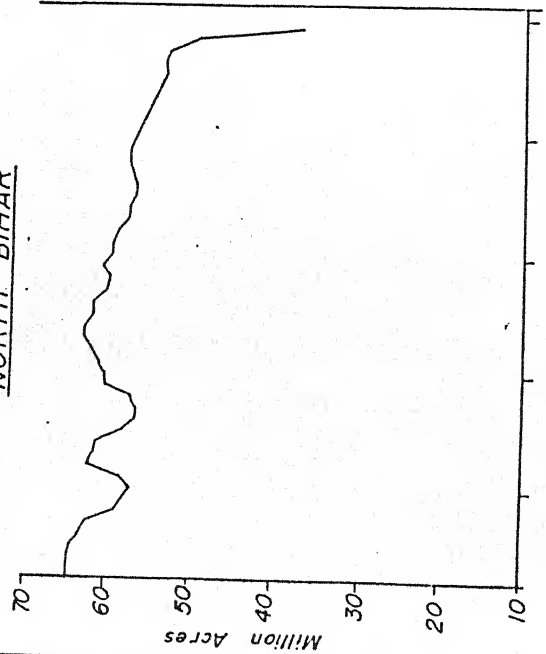
Index Number of All Crop Acreage

(base : 1921 - 23)

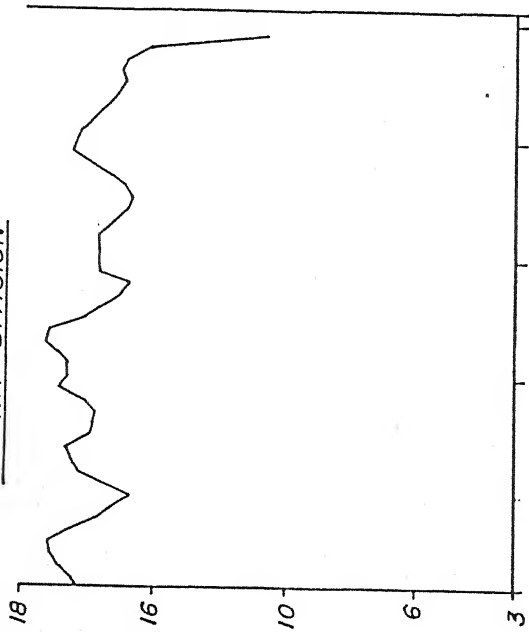
Year	1892-93 to	1897-98 to	1902-03 to	1907-03 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
	1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42
North Bihar	105	99	101	93	102	99	96	94	90	86
Patna Division	104	103	105	102	103	96	99	99	100	95
Tirhut Division	92	89	91	85	96	100	96	94	88	86
Bhagalpur Division	124	109	113	98	106	101	94	89	86	80

ACREAGE OF ALL CROP FIVE YEARS MOVING AVERAGE

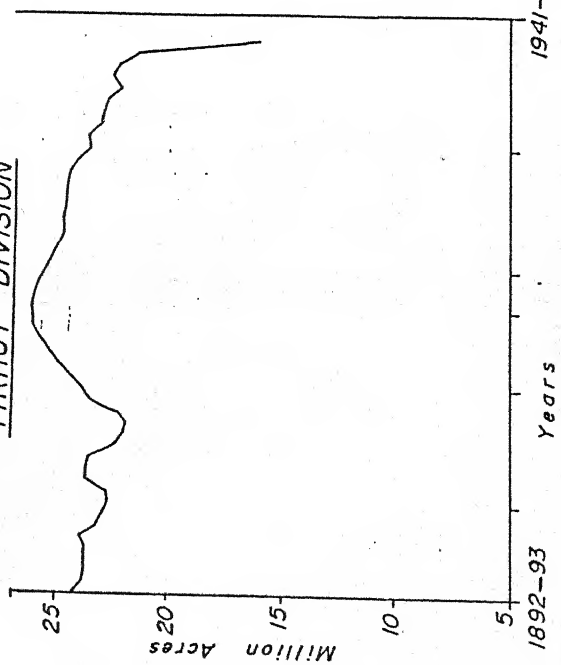
NORTH BIHAR



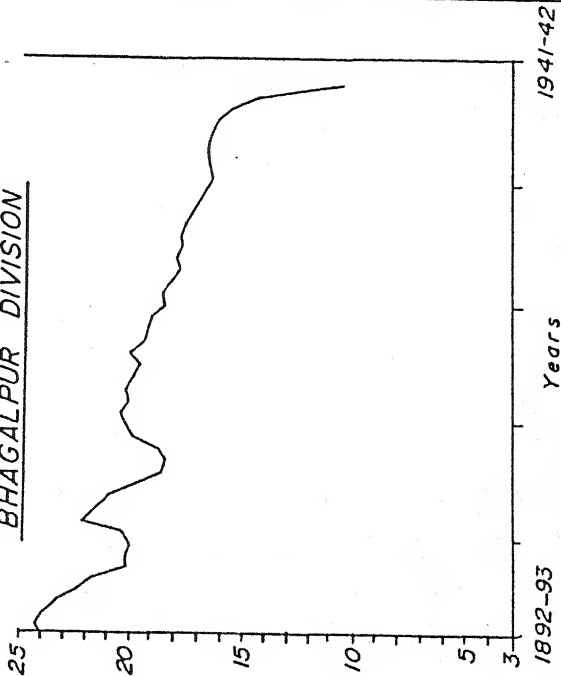
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



of Bengal Presidency, however, one has to enquire into the state of agriculture in Bihar plateau and Orissa.

Bhagalpur division shows higher negative rate of growth during the period. On the other hand, the other two divisions of Patna and Tirhut show negative trends which are lower than the regional rate. The Tirhut division, 0.02 percent, in fact, shows almost no change (Table 3.11).

Coming to the five yearly growth rates, the indices of acreage of all crop output show the following (Table 3.12): (1) The peak period in the growth of all crop acreage is the first quinquennium, i.e. 1892-97. (2) The next peak is the fifth quinquennium, i.e. 1912 to 17. (3) In between the first and fifth quinquennia the crop acreage fluctuated moderately from one quinquennium to the other with a generally decreasing trend. (4) After the quinquennium of 1912-17 the acreage declined steadily.

Pattern of acreage growth in the divisions has both similarities and dissimilarities with the North Bihar pattern. (Table 3.12). Bhagalpur division by and large conforms to the provincial pattern. For Tirhut division, the specific feature is that the acreage growth reaches its peak, and its highest peak at that, in the sixth quinquennium unlike North Bihar and other two divisions. (Table 3.12). The indices of Patna division show somewhat different pattern. After a slight fall in the sixth quinquennium the acreage in the division of Patna shows marginal rise to fall again, 5 percent, in the last quinquennium.

Three observations, therefore, stand out clearly from the above : (1) The annual percentage growth rate of crop acreage shows that the crop acreage in North Bihar has generally fallen in the period between 1892 and 1941. (2) The five yearly rates show fluctuations within this generally declining tendency. One can identify the fifteen years between 1907 and 1922 as the period of highest utilisation of available area for cultivation in North Bihar. (3) There are considerable variations between divisions.

3.5 Trend in foodgrain acreage

The annual percentage growth rate of foodgrain acreage of North Bihar shows negative rate during the period (Table 3.13). The rate is higher than the all-crop rate (Table 11). During the same period Blyn's estimation, 0.0 percent, shows no change. In Blyn's estimate the first four decade trend rate is negative, and the last four decade trend rate is low but positive. The two tendencies thus neutralised each other. Islam's study of Bengal covering twenty six years from 1920 to 1946, however, shows positive

Table 3.13
Trends in Foodgrain Acreage

Region	Annual Percentage Growth Rate		Percentage of total output	
	Output	Population		
North Bihar	- 0.5	2.1	100.00	
Patna Division	- 0.3	3.3	28.94	
Tirhut Division	- 0.1	2.6	42.77	
Bhagalpur Division	- 1.03	2.5	28.29	
	<u>Blyn's Estimate</u>		<u>Islam's Estimate</u>	
	1	2	3	(1920 - 1946)
British India	0.3	0.3	0.4	
Greater Bengal	0.0	- 0.1	0.3	
Madras	0.04	0.3	- 0.03	
Punjab	0.9	1.7	0.4	
United Province	0.4	0.7	0.3	
Central Province	0.4	0.7	0.3	
Bombay-Sindh	0.3	0.2	0.6	
Bengal	—	—	—	1.0 (0.2)

- Note : 1. Blyn's and Islam's estimate have been added to the lower part to the table for comparison.
2. Figures in the bracket indicate rate from revised series of Islam.
3. In Blyn's series nos. 1, 2, and 3 indicate 10 years reference decade rates, first 4 decade rates and last 4 years rates respectively.

Source : Blyn (1966 : 131-132);
Islam (1978 : 70).

Table 3.14

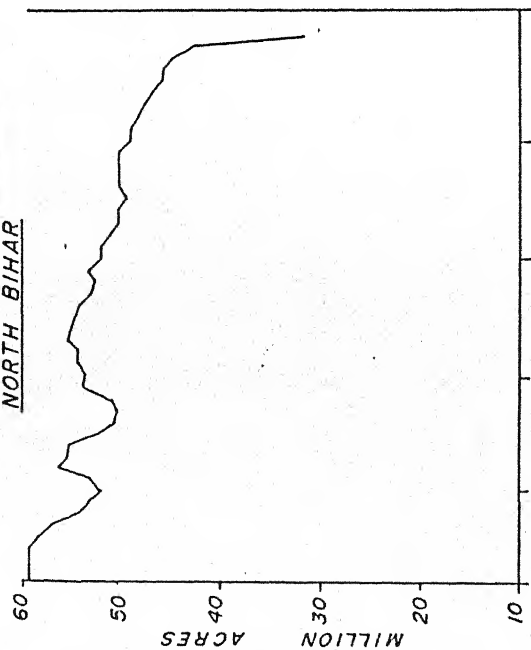
Index Number of Foodcrop Acreage

(base : 1921 - 23)

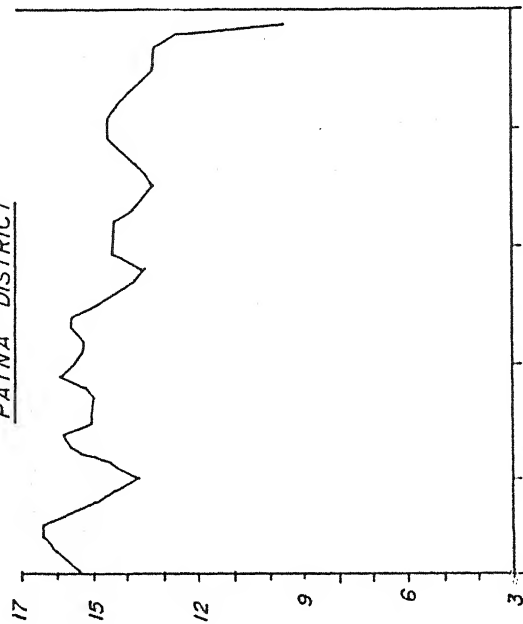
Year	1892-93 to	1897-98 to	1902-03 to	1907-08 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
	1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42
North Bihar	109	103	104	95	103	99	95	94	90	84
Patna Division	107	106	108	105	107	96	98	96	98	91
Tirhut Division	93	92	92	87	97	100	96	94	87	84
Bhagalpur Division	134	117	118	99	107	100	92	90	88	77

ACREAGE OF FOOD CROP FIVE YEARS MOVING AVERAGE

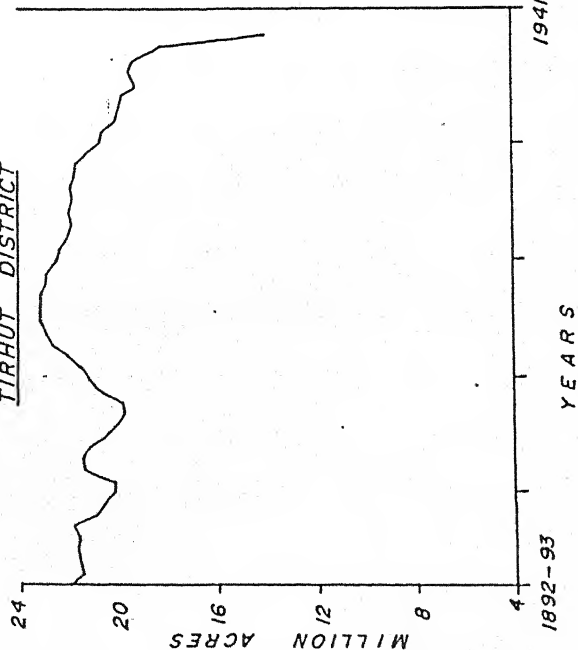
NORTH BIHAR



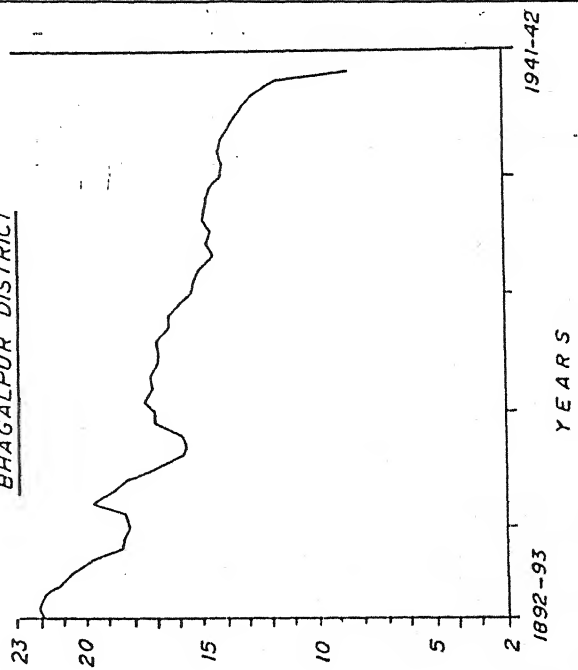
PATNA DISTRICT



TIRHUT DISTRICT



BHAGALPUR DISTRICT



rate both for the official series and for his own adjusted series. This thus suggests the negative impact of North Bihar, as also other parts of Bihar and Orissa not covered here, on the trend of growth of acreage of the erstwhile Bengal presidency. The rates of decline in Patna and Tirhut division are less than the regional rate. But the rate of decline in Bhagalpur Division is considerably higher than the regional rate and the rates of other divisions.

The index number of food crop acreage shows that the period 1912-17 is the turning period in the growth of North Bihar food crop acreage (Table 3.14). Prior to that the acreage fluctuated somewhat from one quinquennium to the other. After the 1912-17 period, however, the acreage fell steadily.

The situation in the division reflects by and large the situation in the region (Table 3.14). For both Patna and Bhagalpur divisions the turning period is 1912-17 i.e. fifth quinquennium. Exception is the Tirhut division for which the turning period is the sixth quinquennium. The fluctuations in the foodcrop acreage were normally low with exceptions only in the ninth quinquennium in Patna division and in the first quinquennium in Bhagalpur division where the acreage showed considerable fluctuations. It is quite natural that in a peasant based subsistence economy the fluctuations in food crop area will not be much except under special circumstances. In North Bihar the fluctuations were marked in the first decade which was a period of unusual natural calamities. The rates of decline in the last five year period is sharp in most of the region.

3.6 Trends in Non-food grain acreage

Non-food crop acreage, however, shows positive growth in the period between 1892 to 1941 thus underpinning Dharm Narain's assertion that depressing agriculture in greater Bengal during the colonial period hide many positive sectors of growth (Narain, 1967) The annual percentage growth rate estimated to be +0.8 percent (Table 3.15).

This rates stand out in contrast to Blyn's estimation of negative growth of non-food grain output during the same period for the British India (Table 3.15). In fact, our estimated rate is higher than those of United Province and Central Province calculated by Blyn and approximate very closely to that of Bombay-Sindh. It is also higher than the rates estimated by Islam for Bengal proper for both the official and revised series. Thus the reasons for negative pull at least in the non-food grain acreage for greater Bengal during the last fifty years of the colonial period cannot be assigned to North Bihar.

Table 3.15
Trends in Non-Foodgrain Acreage

Region	Annual Percentage Growth Rate		Percentage of total output
	Output	Population	
North Bihar	0.8	2.1	100.00
Patna Division	1.5	3.3	21.35
Tirhut Division	0.7	2.6	40.78
Bhagalpur Division	0.6	2.5	37.89

	Blyn's Estimate			Islam's Estimate (1920 - 1946)
	1	2	3	
British India	0.4	0.9	0.03	
Greater Bengal	-0.4	-0.5	0.00	
Madras	1.2	1.6	0.7	
Punjab	1.2	1.7	0.5	
United Province	0.6	1.4	0.4	
Central Province	0.1	1.5	-1.4	
Bombay-Sindh	0.9	1.8	0.05	
Bengal	—	—	—	1.2 (0.1)

- Note : 1. Blyn's and Islam's estimate have been added to the lower part to the table for comparison.
2. Figures in the bracket indicate rates from revised series of Islam.
3. In Blyn's series nos. 1, 2, and 3 indicate 10 years reference decade rates, first 4 decade rates and last 4 years rates respectively.

Source : Blyn (1966 : 131-132);
Islam (1978 : 70).

Table 3.16

Index Number of Cash Crop Acreage

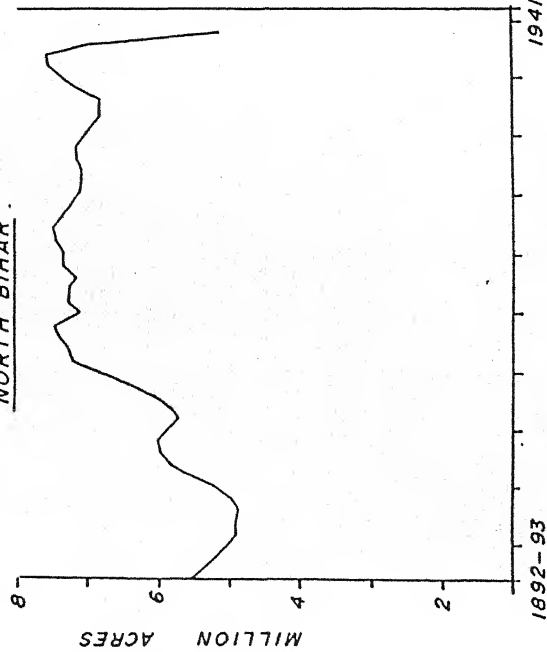
(base : 1921 - 23)

Year	1892-93 to 1896-97	1897-98 to 1901-02	1902-03 to 1906-07	1907-08 to 1911-12	1912-13 to 1916-17	1917-18 to 1921-22	1922-23 to 1926-27	1927-28 to 1931-32	1932-33 to 1936-37	1937-38 to 1941-42
North Bihar	73	66	78	81	97	98	100	95	92	101
Patna Division	72	67	73	67	117	91	102	130	115	126
Tirhut Division	80	70	77	76	88	98	94	91	98	100
Bhagalpur Division	68	62	82	92	93	100	105	84	76	92

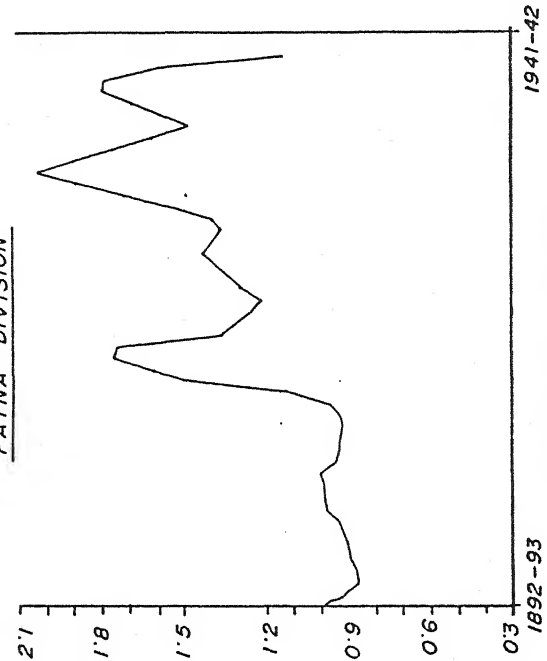
ACREAGE OF CASH CROP

(Five years moving average)

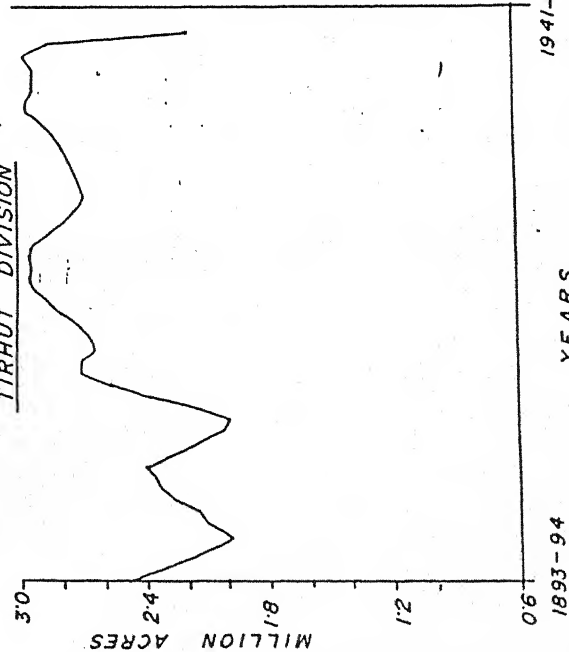
NORTH BIHAR



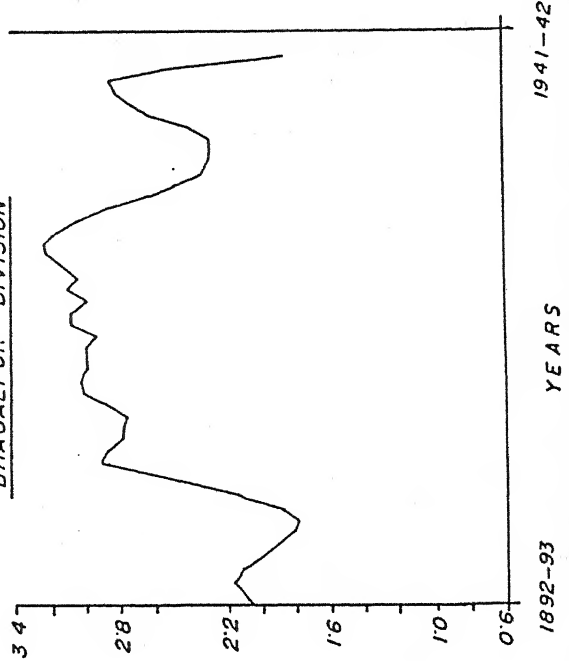
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



Of the North Bihar divisions, the rate of Patna division, 1.5 percent, is higher than the rates of North Bihar. It is, in fact, higher than the rates of even Punjab and Madras, the fastest growing regions as per rates calculated by Blyn. The rates of growth of Bhagalpur and Patna division are, however, lower than the regional rates.

The five yearly growth rates of non-food grains acreage of North Bihar follows a distinct pattern (Table 3.16). One low is the second quinquennium i.e. 1897-02. This is the period that follow the most devastating half decade of drought and famine in North Bihar's agriculture ending with the 1896. The other low is in the ninth quinquennium of 1932-37 which is the period of great depression. In between, the non-food grain acreage showed steady rise. This period stretches from 1902 to 1927. This is the period during which the indigo went into extinction and its cultivation was replaced by the ingressing sugarcane

Patna shows greater degree of fluctuations within a generally rising tendency. But the peak of non-food grain crop acreage in this division is reached in the fifth and the eighth quinquennia, the later being higher than the former, which are different from that of North Bihar (Table 3.16). Further, the fluctuation in acreage in Patna division is high. The acreage in Tirhut division by and large follows the regional pattern. Like Patna division again, the acreage pattern in Bhagalpur shows greater fluctuation than that of North Bihar. Its peak is the seventh quinquennium. In this it agrees with North Bihar but disagrees with other divisions. The depression seems to have affected the acreage under non-food crops in this division.

The following observations, therefore, follow from the foregoing discussion: (1) The growth of acreage under non-food grains is positive in North Bihar. By and large the interwar period is the period of growth of cash crop in North Bihar. (2) The growth rate, in fact, is higher than that of other regions of India calculated by Blyn and also that of Bengal proper estimated by Islam. (3) The decline of greater Bengal non-food crop acreage should, therefore, be sought in other regions like southern Bihar plateau and Orissa. (4) The divisional rates reveal considerable regional variation in the acreage pattern within North Bihar.

3.7 Trends in all crop yield per acre

The rate of growth of the yield per acre for all crop shows almost no change, - 0.07 percent or more appropriately perhaps, only marginal decline during the period

Table 3.17
Trends in All Crop Yield Per Area

Region	Annual Percentage		Percentage of total output	
	Growth Rate			
	Output	Population		
North Bihar	- 0.07	2.1	100.00	
Patna Division	- 0.3	3.3	29.60	
Tirhut Division	- 0.1	2.6	39.40	
Bhagalpur Division	0.3	2.5	30.90	
	Blyn's Estimate		Islam's Estimate	
	1	2	3	(1920 - 1946)
British India	0.01	0.5	- 0.02	
Greater Bengal	- 0.3	0.08	- 0.5	
Madras	0.6	1.2	0.2	
Punjab	0.6	0.5	0.9	
United Province	0.1	0.4	0.2	
Central Province	0.08	1.1	- 0.9	
Bombay-Sindh	0.3	0.5	0.3	
Bengal	—	—	—	0.1

- Note : 1. Blyns and Islam's estimates have been added to the lower part of the table for comparison.
2. In Blyn's estimate nos. 1, 2, and 3 refer 10 years reference decade rates, first 4 decade rates and last 4 years decade rates respectively.

Source : Blyn (1966 : 165-166);
Islam (1978 : 75).

Table 3.13

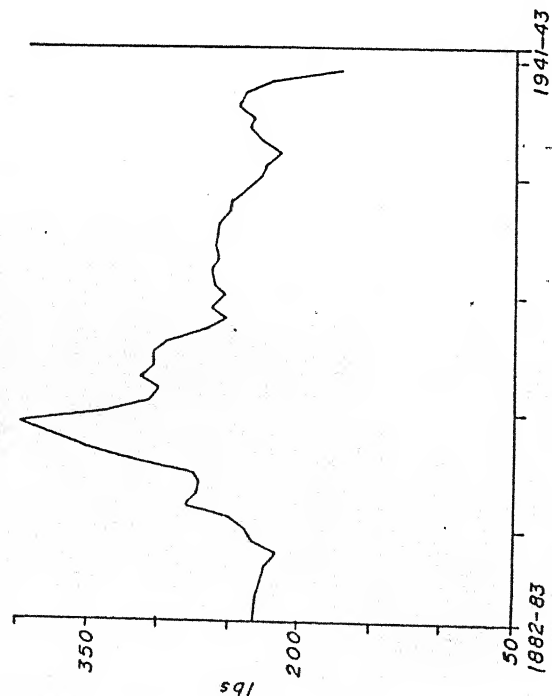
Index Number of All Crop Yield Per Acre

(base : 1921 - 23)

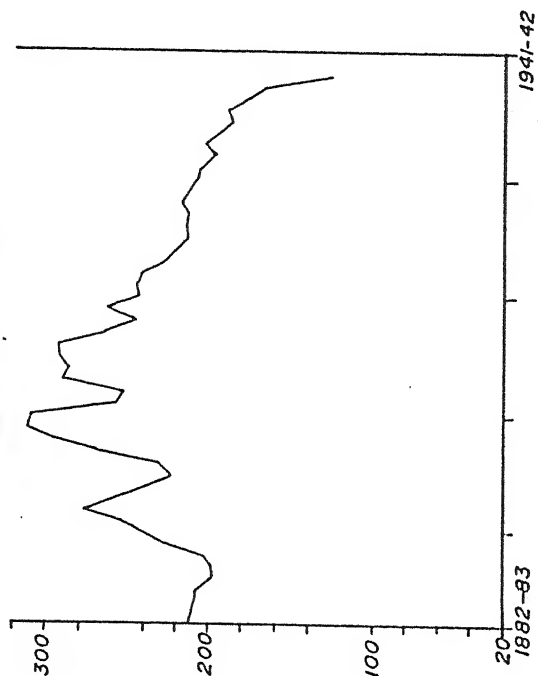
Year	1892-93 to	1897-98 to	1902-03 to	1907-08 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
	1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42
North Bihar	90	84	108	138	120	104	104	98	87	94
Patna Division	85	80	111	111	108	105	96	87	80	71
Tirhut Division	93	87	102	171	112	99	104	103	92	85
Bhagalpur Division	88	83	108	125	134	109	109	103	86	123

YIELD OF ALL CROP PER ACRE
(FIVE YEARS MOVING AVERAGE WEIGHTED BY PRICE)

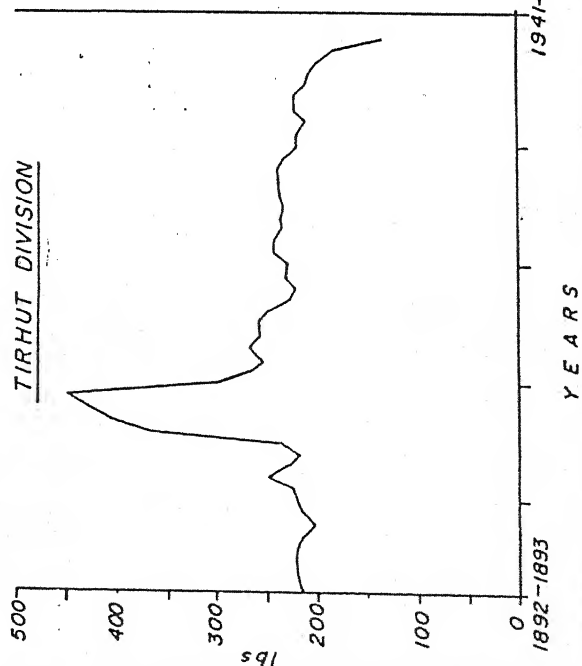
NORTH BIHAR



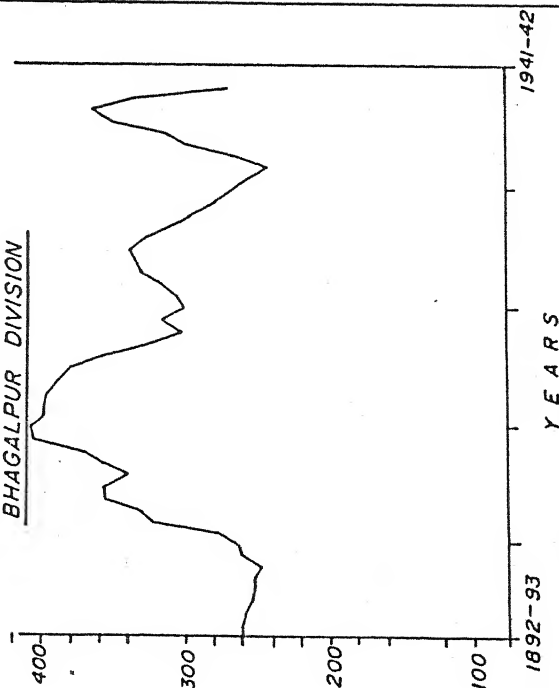
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



(Table 3.17). It might be recalled in this connection that during the same period the area under all crops in North Bihar also declined at a slightly higher rate of -0.3 percent (Table 11). During the same period Blyn's estimate of the growth rate of yield per acre of greater Bengal shows little higher rate of decline. The growth of yield per acre rate of Bengal proper calculated by Islam, however, found to be slightly positive and higher for twenty seven years from 1920 to 1946 (Table 3.17).

Bhagalpur Division shows positive rates of growth for its all-crop yield rates. Both Patna and Tirhut Division, however, show negative growth rates.

Index of quinquennial rates of growth show that the all crop productivity reached its highest point in the fourth quinquennium. After that it fell steadily reaching its lowest depth in the quinquennium of the great depression i.e. 1932-33 to 1936-37 (Table 3.18). From there it showed some moderate rise. Further, the rates of change in the productivity prior to 1912-17 were moderately high. But the rates of decline after that quinquennium are slow (Table 3.18).

Patna division by and large, conforms to the North Bihar pattern. Only two things to be specially noted here: First, the yield per acre rate in this division fell even after the ninth quinquennium; i.e. after the depression. Second, in the period between 1902 to 1917 the yield per acre rate did not fluctuate much. For Tirhut Division, the yield per acre rate reached its peak in the fourth quinquennium. After that it fell almost continuously till the second world war, with only a moderate upward swing in the seventh quinquennium. Further, in Tirhut Division, the rate of change in productivity rates was high. For Bhagalpur Division, on the other hand, the productivity rate rose steadily after the second quinquennium to reach its peak in the five year period between 1912 to 1917. After that it fell steadily till the period of the Great Depression. After the depression, the productivity rate in Bhagalpur division rose sharply during the second world war.

3.8 Trend in foodgrain yield per acre

Trend in yield per acre of foodgrain rates, however, show decline during the last fifty years of colonial period in North Bihar (Table 3.19). The decline in the productivity of rice, the most important foodcrop, primarily accounted for this decline in the foodcrop productivity rate. The moderate increase in the yield per acre of gram etc. could not make up the decline in the rice productivity (see next chapter on this). The decline in the yield per acre of foodgrains in North Bihar is, however, less than the decline of foodcrop yield

Table 3.19
Trends in Foodgrain Yield Per Acre

Region	Annual Percentage Growth Rate		Percentage of total output
	Output	Population	
North Bihar	- 0.4	2.1	100.00
Patna Division	- 0.4	3.3	28.94
Tirhut Division	- 0.4	2.6	42.77
Bhagalpur Division	- 0.3	2.5	28.29
	Blyn's Estimate		Islam's Estimate
	1	2	3
			(1920 - 1946)
British India	- 0.2	0.3	- 0.4
Greater Bengal	- 0.5	- 0.1	- 0.7
Madras	0.3	0.9	- 0.03
Punjab	0.3	0.3	0.5
United Province	- 0.02	0.6	- 0.3
Central Province	0.05	1.1	- 0.8
Bombay-Sindh	- .1	0.4	- 0.4
Bengal	—	—	—
			- 0.2

- Note : 1. Blyn's and Islam's estimate have been added to the lower part to the table for comparison.
2. In Blyn's series nos. 1, 2, and 3 indicate 10 years reference decade rates, first 4 decade and last 4 years decade rates respectively.

Source : Blyn (1966 : 165-166);
Islam (1978 : 77).

Table 3.20

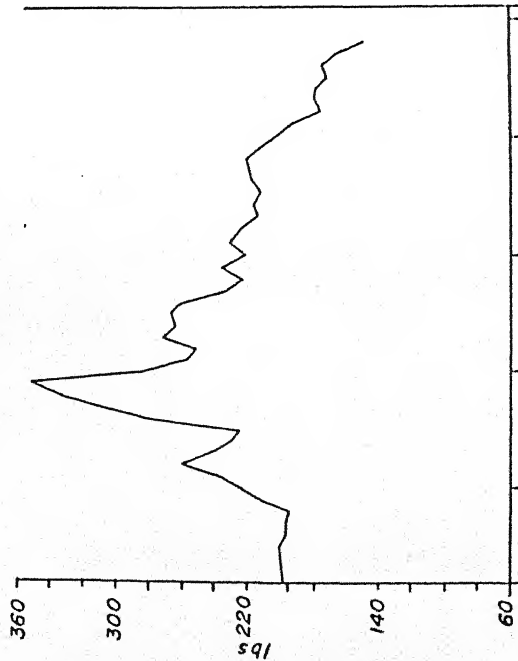
Index Number of Food Crop Yield Per Acre

(base : 1921 - 23)

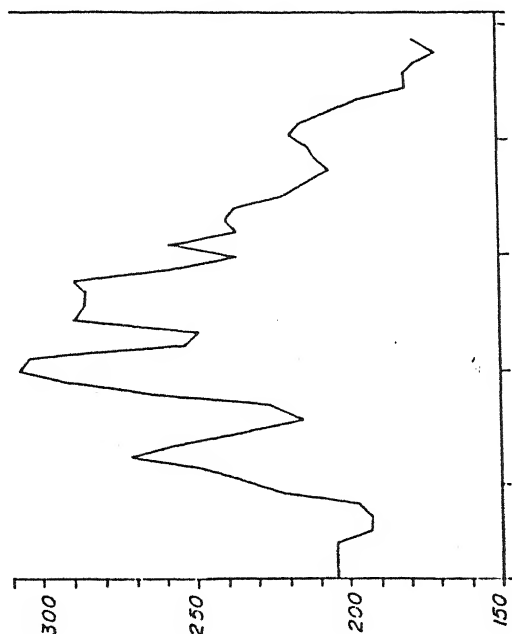
Year	1892-93 to	1897-98 to	1902-03 to	1907-08 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
	1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42
North Bihar	86	84	110	136	114	102	97	96	77	70
Patna Division	84	79	111	112	109	105	97	88	74	68
Tirhut Division	90	84	105	174	114	100	103	102	80	75
Bhagalpur Division	85	87	112	112	117	101	89	95	76	66

YIELD PER ACRE OF FOOD CROP (FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE)

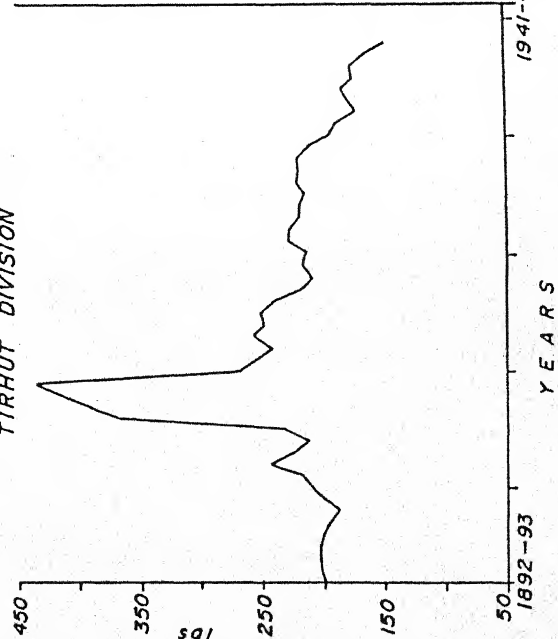
NORTH BIHAR



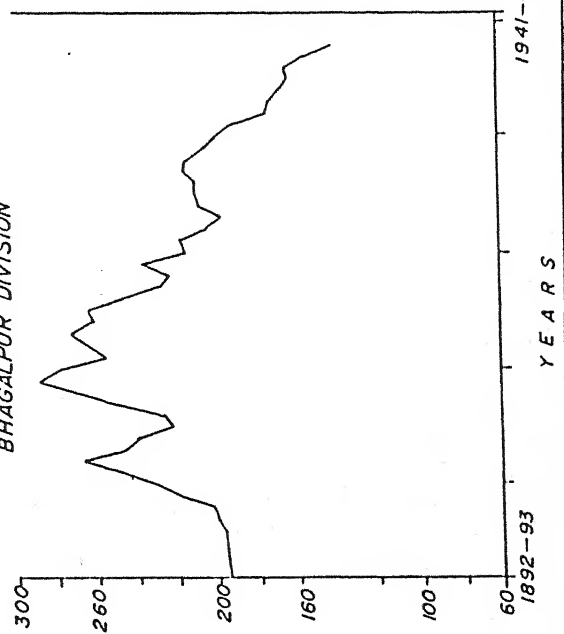
PATNA DIVISION



TIRHUT DIVISION



BHAGALPUR DIVISION



per acre of greater Bengal as calculated by Blyn. But the decline in North Bihar is higher than the productivity of food crops of Bengal proper calculated by Islam during the period between 1920 to 1946.

The trends in Patna and Tirhut division conform to the yield per acre of food crop in the North Bihar. The trend rate for the Bhagalpur division is, however, little higher than the regional rate.

The turning period in the food crop productivity rate is the fourth quinquennium; i.e. the period between 1907-08 to 1911-12. After that the yield per acre rate fell steadily (Table 3.20). Further, the rate of decline is quite high except between seventh and eighth quinquennia.

Both the divisions of Patna and Tirhut match well with the North Bihar pattern. There is, however, palpable sign of acceleration in the rate of decline after the seventh quinquennium in case of Patna division and after the eighth quinquennium in case of Tirhut division. Bhagalpur division has, however, many deviations from the rest of North Bihar. First, the high point of yield per acre of Bhagalpur division is the fifth quinquennium, i.e. 1912-13 to 1916-17. Secondly, the rates in the division have greater fluctuations. It might be due to fluctuations in the productivity of jute crop.

3.9 Trend in non-food grain yield per acre

As in the case of output and area, the yield per acre of non-food grain crops show positive trend (Table 3.21) though the trend rate is somewhat less than the trend growth rate of area (Table 3.21). It is also a little less, 0.4 percent less, than the greater Bengal rate as calculated by Blyn and much less than that calculated by Islam for Bengal proper. Possibly the yield per acre rate of cash crops in Bengal proper is boosted by high productivity rate of tea.

Divisional rates do not agree with the regional rate in any respect. Both the Tirhut and Bhagalpur divisions have a little higher growth rate of productivity while Patna division, -0.4 percent, shows decline in the yield per acre rate of its cash crops. It is likely that the relatively high rate of sugarcane yield per acre might have contributed to the relatively higher productivity rate of cash crops in Tirhut and Bhagalpur divisions.

The five-yearly segmented growth rates for North Bihar showed the following pattern (Table 3.22). They have two highs of equal heights: one in the fourth quinquennium

Table 3.21

Region	Annual Percentage Growth Rate		Percentage of total output
	Output	Population	
North Bihar	0.2	2.1	100.00
Patna Division	-0.4	3.3	21.35
Tirhut Division	0.4	2.6	40.76
Bhagalpur Division	0.3	2.5	37.89

	Blyn's Estimate			Islam's Estimate (1920 - 1946)
	1	2	3	
British India	0.9	0.3	1.1	
Greater Bengal	0.6	0.7	0.3	
Madras	1.2	1.6	0.6	
Punjab	1.1	0.5	1.7	
United Province	0.2	-0.3	0.9	
Central Province	0.7	1.6	-0.02	
Bombay-Sindh	0.9	0.1	2.1	
Bengal	—	—	—	1.2

Note : 1. Blyns and Islam's estimate have been added to the lower part of the table for comparison.

2. In Blyn's series nos.1, 2, and 3 refer to 10 reference decade rates, first 4 decade rates and last 4 decade rates respectively.

Source : Blyn (1966 : 165-166);
Islam (1978 : 78).

Table 3.23

Index Number of Cash Crop Yield Per Acre

(base : 1921 - 23)

Year	1892-93 to	1897-98 to	1902-03 to	1907-08 to	1912-13 to	1917-18 to	1922-23 to	1927-28 to	1932-33 to	1937-38 to
	1896-97	1901-02	1906-07	1911-12	1916-17	1921-22	1926-27	1931-32	1936-37	1941-42
North Bihar	123	104	109	150	140	108	118	101	113	150
Patna Division	112	101	119	117	109	107	96	75	127	92
Tirhut Division	112	111	83	145	100	89	101	105	141	123
Bhagalpur Division	137	104	111	145	164	114	125	115	106	188

YIELD OF CASH CROP PER ACRE
(FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE)

NORTH BIHAR

PATNA DIVISION

TIRHUT DIVISION

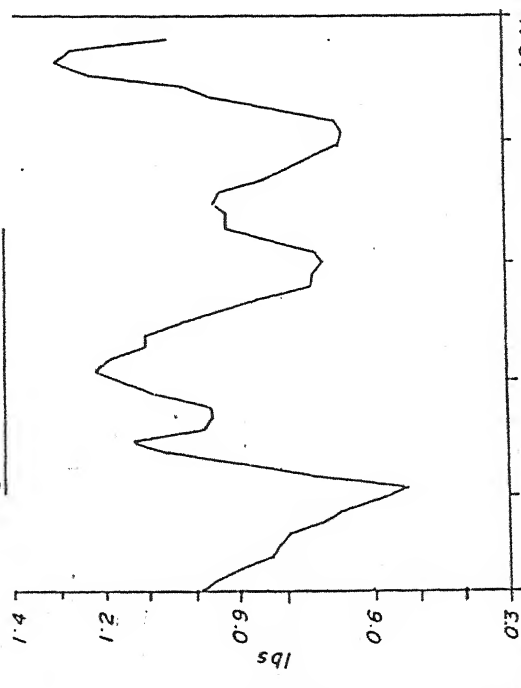
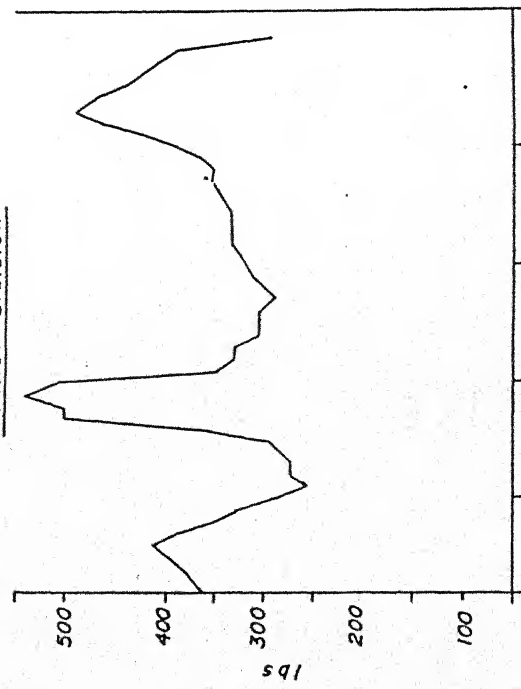
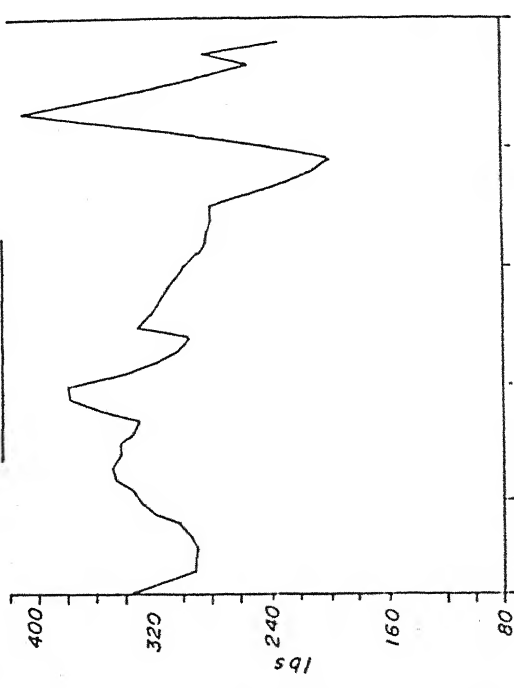
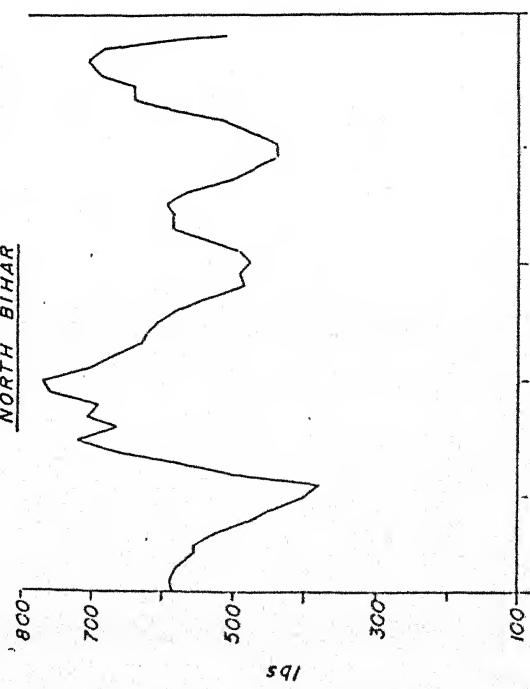
BHAGALPUR DIVISION

1892-93

1941-42 1892-93

1941-42

YEARS



and the other in tenth. ~~They have~~ two lows also: one in the second quinquennium and in the eighth. The second low is lower than the first. Further, there is fairly wide fluctuations in the productivity rate.

Patna Division conforms to the regional pattern in almost all respect (Table 3.22). But the rate of decline is sharper after the period between 1922-23 and 1931-32. So is the rise in the ninth quinquennium and the fall there after. Thus, in the Patna division the fluctuations in the rates are more pronounced. Tirhut and Bhagalpur divisions show similar pattern: Only in case of Tirhut division the productivity rates have fallen quite sharply in the last quinquennium.

One general observation that one can make here is that for the cash crop yield per acre the watershed decade is the period 1907-08 to 1916-17. The cash crop productivity reached its peak during this decade to fall steadily till the beginning of the second world war. The war saw a sharp boost in the productivity rate of cash crops in this regions except in the Patna division.

From the discussion in this chapter, therefore, the following overview about the agricultural growth in North Bihar can be inferred. The agricultural growth in North Bihar generally declined during the last fifty years of the colonial rule. The rate of decline is in commensurate with the rate of decline of Greater Bengal. On the other hand this declining agriculture stood in contrast to the relative growth of Bengal proper particularly during the later part of the colonial days. The turning period in this agricultural growth is the five years period between 1907-08 to 1916-17. This is the peak period and also the period of the beginning of demise thenceforth. With virtual population explosion after 1921 in this region, the period also saw almost catastrophic fall in the per capita agricultural production.

Of the two determinants of crop output, the area cropped fell at a slightly higher rate than the yield per acre rate in North Bihar. And here again the situation in North Bihar is somewhat different from that of Greater Bengal where the agricultural productivity fell at slightly higher rate at the face of little or no change in area cropped. On the other hand, in the Bengal proper in the last four decades of colonial period, the agricultural productivity rose at rates higher than the rate of growth of cropped area. With the agriculture in Bengal proper showing signs of growth, the inference is inevitable that the North Bihar agriculture had lent its own weight to the decline of agriculture in the

Table 2.23

Ratio of Output of Non-Feedcrop
to All Crop OutputRatio of Area Under Non-Feedcrop
to All Crop

	North Bihar	Patna Division	Tidhut Division	Bhagalpur Division	North Bihar	Patna Division	Tidhut Division	Bhagalpur Division
1892-93	0.18	0.12	0.17	0.22	0.09	0.07	0.1	0.08
93-94	0.16	0.12	0.15	0.2	0.09	0.07	0.1	0.08
94-95	0.15	0.07	0.14	0.21	0.07	0.05	0.1	0.09
95-96	0.13	0.05	0.13	0.2	0.08	0.05	0.1	0.09
96-97	0.15	0.06	0.14	0.22	0.08	0.05	0.09	0.09
97-98	0.13	0.06	0.12	0.2	0.08	0.05	0.08	0.09
98-99	0.12	0.06	0.11	0.17	0.08	0.05	0.08	0.09
1899-1900	0.13	0.07	0.12	0.17	0.07	0.05	0.07	0.08
1900-01	0.13	0.03	0.12	0.18	0.08	0.07	0.1	0.1
01-02	0.13	0.09	0.13	0.18	0.09	0.07	0.1	0.08
02-03	0.08	0.06	0.09	0.08	0.08	0.06	0.1	0.09
03-04	0.09	0.09	0.03	0.09	0.09	0.03	0.1	0.12
04-05	0.08	0.06	0.07	0.11	0.1	0.05	0.1	0.12
05-06	0.16	0.06	0.09	0.29	0.09	0.05	0.09	0.12
06-07	0.19	0.07	0.10	0.34	0.09	0.06	0.09	0.15
07-08	0.22	0.09	0.10	0.39	0.1	0.06	0.09	0.15
08-09	0.19	0.12	0.1	0.33	0.11	0.07	0.09	0.16
09-10	0.05	0.05	0.02	0.12	0.09	0.05	0.09	0.13
1910-11	0.13	0.04	0.15	0.23	0.11	0.05	0.11	0.16
11-12	0.16	0.07	0.09	0.3	0.11	0.06	0.12	0.14
12-13	0.21	0.11	0.1	0.34	0.11	0.06	0.11	0.15
13-14	0.15	0.08	0.09	0.26	0.12	0.08	0.11	0.15
14-15	0.2	0.1	0.1	0.39	0.13	0.15	0.1	0.15
15-16	0.15	0.08	0.08	0.26	0.11	0.08	0.1	0.14
16-17	0.13	0.07	0.08	0.23	0.11	0.08	0.1	0.14
17-18	0.15	0.07	0.08	0.32	0.12	0.08	0.11	0.17
18-19	0.16	0.13	0.10	0.27	0.11	0.09	0.11	0.13
19-20	0.15	0.07	0.1	0.27	0.12	0.08	0.11	0.17

Table 3.23 (Contd.)

Ratio of Output of Non-Foodcrop to All Crop Output				Ratio of Area Under Non-Foodcrop to All Crop			
North Bihar	Patna Division	Tibut Division	Bhagalpur Division	North Bihar	Patna Division	Tibut Division	Bhagalpur Division
1820-21	0.16	0.1	0.12	0.20	0.03	0.11	0.16
21-22	0.12	0.09	0.1	0.18	0.08	0.11	0.15
22-23	0.13	0.07	0.1	0.23	0.03	0.11	0.16
23-24	0.19	0.1	0.13	0.30	0.09	0.12	0.19
24-25	0.16	0.09	0.09	0.29	0.09	0.11	0.17
25-26	0.19	0.1	0.11	0.30	0.1	0.11	0.18
26-27	0.21	0.1	0.11	0.42	0.03	0.11	0.18
27-28	0.17	0.1	0.11	0.29	0.09	0.11	0.17
28-29	0.18	0.11	0.11	0.29	0.1	0.11	0.16
29-30	0.15	0.09	0.1	0.26	0.12	0.11	0.13
1930-31	0.15	0.09	0.13	0.23	0.12	0.11	0.14
31-32	0.13	0.09	0.1	0.21	0.12	0.11	0.14
32-33	0.17	0.11	0.16	0.22	0.12	0.12	0.13
33-34	0.21	0.14	0.24	0.25	0.09	0.13	0.14
34-35	0.21	0.15	0.2	0.28	0.09	0.12	0.14
35-36	0.25	0.21	0.26	0.26	0.1	0.13	0.13
36-37	0.27	0.2	0.21	0.39	0.09	0.13	0.15
37-38	0.3	0.1	0.18	0.54	0.13	0.13	0.21
38-39	0.25	0.14	0.2	0.39	0.13	0.13	0.17
39-40	0.29	0.14	0.2	0.49	0.13	0.13	0.17
40-41	0.34	0.18	0.24	0.57	0.09	0.13	0.19
1941-42	0.34	0.18	0.23	0.57	0.09	0.13	0.18

Table S.23 (Contd.)

Ratio of Yield Per Acre of Non-Foodcrop
to All Crop Output

	North Bihar	Patna Division	Patna Division	Bhagalpur Division
1892-93	0.12	0.12	0.17	0.22
93-94	0.10	0.12	0.15	0.2
94-95	0.12	0.07	0.14	0.21
95-96	0.13	0.04	0.13	0.2
96-97	0.15	0.06	0.14	0.22
97-98	0.13	0.06	0.12	0.19
98-99	0.12	0.06	0.11	0.17
1899-1900	0.13	0.07	0.12	0.17
1900-01	0.14	0.06	0.12	0.18
01-02	0.14	0.06	0.13	0.15
02-03	0.08	0.06	0.09	0.08
03-04	0.03	0.09	0.03	0.09
04-05	0.08	0.06	0.07	0.11
05-06	0.16	0.06	0.09	0.29
06-07	0.18	0.07	0.1	0.34
07-08	0.22	0.09	0.1	0.39
08-09	0.19	0.12	0.09	0.33
09-10	0.06	0.05	0.02	0.18
1910-11	0.13	0.04	0.15	0.23
11-12	0.15	0.07	0.09	0.30
12-13	0.21	0.11	0.1	0.34
13-14	0.14	0.03	0.03	0.26
14-15	0.2	0.10	0.1	0.39
15-16	0.15	0.08	0.08	0.26
16-17	0.13	0.07	0.08	0.24
17-18	0.16	0.07	0.08	0.32
18-19	0.16	0.13	0.1	0.27
19-20	0.15	0.07	0.1	0.27

Ratio of Yield Per Acre of Non-Foodcrop
to All Crop Output

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1892-93	0.18	0.12	0.17	0.22
93-94	0.16	0.12	0.15	0.2
94-95	0.15	0.07	0.14	0.21
95-96	0.13	0.05	0.13	0.2
96-97	0.15	0.06	0.14	0.22
97-98	0.13	0.06	0.12	0.19
98-99	0.12	0.06	0.11	0.17
1899-1900	0.13	0.07	0.12	0.17
1900-01	0.14	0.08	0.12	0.18
01-02	0.14	0.09	0.13	0.15
02-03	0.08	0.06	0.09	0.08
03-04	0.09	0.09	0.08	0.09
04-05	0.08	0.06	0.07	0.11
05-06	0.16	0.06	0.09	0.29
06-07	0.18	0.07	0.1	0.34
07-08	0.22	0.09	0.1	0.39
08-09	0.19	0.12	0.09	0.33
09-10	0.06	0.05	0.02	0.18
1910-11	0.13	0.04	0.15	0.23
11-12	0.15	0.07	0.09	0.30
12-13	0.21	0.11	0.1	0.34
13-14	0.14	0.08	0.09	0.26
14-15	0.2	0.10	0.1	0.39
15-16	0.15	0.08	0.08	0.26
16-17	0.13	0.07	0.08	0.24
17-18	0.16	0.07	0.08	0.32
18-19	0.16	0.13	0.1	0.27
19-20	0.15	0.07	0.1	0.27

eastern India. The situation in south Bihar plateau and Orissa remains to be explored, of course.

This generally stagnating agriculture however, hides some divergent trends and areas of growth. The food production, of course, declined both the area under food crop and their yield per acre contributing to this decline. With the population rising particularly after 1921, this meant critical fall in the per capita availability of food to the people of North Bihar, leading to persistent food shortage, occasional famine, poor public health and, not infrequently, pestilence.

The non-food grain crops however, present somewhat different picture. Its growth rate is positive. In fact, ~~the~~ rate is higher than the growth rate of greater Bengal during the period. It also compares favourably with the rate of growth of cash crops of Bengal proper during the last four decades of the colonial period. The main contributing factor to this is the rise in the area under non-food grain crops though the yield per acre too had its share. The area under non-food grain crops in North Bihar grew at rates somewhat higher than the rate of growth of yield per acre. Further, the rate of growth of area under non-food grain crops is higher than that in greater Bengal as well as Bengal proper. On the other hand the growth rate of yield per acre is slightly lower than that of greater Bengal and also Bengal proper.

In order to bring out in sharper focus this relationship of food grain and non-food grain crops in North Bihar we have presented the ratios of output, area and yield per acre of food and non-food crops in Table 3.23. The table shows the following things : First except in the period between 1902-03 and 1904-05 and in 1909-10, the share of non-food grain output varied from 12 to 20 percent of the total crop production till 1931-32 i.e. the depression period. After that there was sharp rise in the share of non-food grain output, its share in total crop production thereafter varying between 21 percent to 35 percent. (Table 3.23).

The divisional pattern by and large conform to the regional pattern. But the share of non-food grains to total crop in Bhagalpur division is almost at all levels higher than the regional share. This is the division which produced jute. The share in both Tirhut and Patna divisions is lower than that of Bhagalpur division and North Bihar as a whole. Second, the ratios of area under non-food grain shows rise from 1910 and more sharply, from 1930. The divisions show similar pattern. But in case of Bhagalpur the ratios are

higher. Third, the ratios of yield per acre of non-food crops to all crop also show rise, except in the few initial years of this century. The divisions follow the regional pattern.

In a few words the conclusions of this chapter can thus be summarised: First, the agricultural production in North Bihar has declined in the last fifty years of colonial rule. Second the output has fallen due to slightly higher decline in the cropped area and also due to marginal changes in the yield per acre. Third, the non-food grain production has, however, increased. The growth rates of output, area and yield per acre of non-food crop has risen though not significantly. Fourth, the food production has declined sharply with serious drop in the per capita availability of food. In this case the rate of decline in area cropped is slightly more than the rate of decline in the yield per acre. This relationship somewhat modifies Bagchi's suggested hypothesis in his 'Reflections On Patterns of Regional Growth during the period of British Rule' on the relationship between area and productivity in the declining agriculture in Bihar region (Bagchi, 1976 : 45).

In the next chapter we take up the individual crops for our consideration.

Chapter IV

INDIVIDUAL CROPS

In this chapter we would deal with the individual crops in North Bihar. In the matter of presentation we have followed the same sequence of area, output and yield per acre as we did in the earlier chapter. In each case the discussion on North Bihar as a whole is followed by the discussion of the three divisions.

Like the previous chapter the data have been presented in three basic tables, namely (1) the annual percentage growth rates of output, area and yield per acre ; (2) the indices of four-yearly segmented growth and (3) the graphs of moving averages of the series of output, areas and yield per acre. In each case the individual crops rather than aggregate have been dealt with. In order to indicate the importance of each individual crops, we have also estimated the percentage of output and area respectively of individual crops to those of all crops.

Till 1900-01 the information on rice is given in their aggregate. From 1901-02, after the publication of Season and Crop Report, the information on rice was published separately for winter rice, autumn rice and summer rice and their total.

To obviate this difficulty, we have taken the winter rice and autumn rice from 1901-02 to estimate the rates. We have omitted summer rice altogether as it accounted for less than one percent of the total rice production of North Bihar. Further, the data gaps at the district level are enormous in the case of summer rice.

4.1 Trends in Individual Crop Output

Table 4.1 shows that two of the major foodcrops, winter rice and autumn rice, have negative rates of growth of output. The output of maize, the food of the Behari poor, also shows negative growth rate. Barley, 0.02 percent rate, shows almost no change. On the other hand, the wheat production increased at a barely positive rate (0.3 percent). The rate of growth of gram production was positive and higher than that of wheat.

Among the major cash crops, sugarcane, and among the minor cash crops, linseed, rape and mustard and jute showed positive growth rates. But the production of til, tobacco and, of course, indigo dropped. Indigo, a major cash crop in 1895 virtually disappeared from 1915.

The Patna division by and large, conforms to the regional pattern. In Tirhut division the production of barley, among the food crops, increased at positive rates. On the other hand, the rate of linseed production decreased slightly. The production of cash crops like sugarcane and rape and mustard increased at rates somewhat higher than the regional. Til output production in Tirhut division showed near-zero rate. In Bhagalpur division the sugarcane production showed negative rates of growth. Further, the rate of increase of jute output in Bhagalpur division was almost equal to that of the region. The high negative growth rate of indigo crop, - 22.3 percent, testified to the withering away of this crop from this division also.

For the output of two major foodcrops of winter and autumn rice, the turning point is the decade 1907-1917. The trend of rice production in the aggregate in North Bihar can, in fact, broadly be divided into two periods. During the first period between 1902 and 1912 (Table 4.4 to 4.5) rice production in North Bihar rose at moderate rates despite frequent drought, flood and famine during the period. The winter rice output reached its peak in the fourth quinquennium (Table 4.4) and the autumn rice in the fifth quinquennium (Table 4.5). After this throughout the rest of the period till the end of the second world war the rice production fell unabated though at slow rates.

There was no representative division in North Bihar in rice production; they differed from the region in one way or the other. Till about the first world war winter rice production rate in Patna, Tirhut and Bhagalpur showed irregular rates of fluctuations. After 1912, winter rice production in Patna and Tirhut division fell, but increased in Bhagalpur division. But after 1916-17 the rate of winter rice output fell in all the divisions.

In the production of autumn rice, the decade between 1912 and 1922 can broadly be identified as the turning period (Table 4.6 and 4.7). Till 1912 the rate of autumn rice production in Tirhut and Patna division increased, the production in Bhagalpur remaining constant. After this decade the rate in all the divisions fell. In Patna division its growth rate remained stable in the last two quinquennia.

In North Bihar the rice was grown primarily for home consumption and not for marketing. Even when Burma was a part of India, rice trade was hardly 8 per cent of the total external foodgrain trade in India (Jather and Beri, 1949 : 164). After the separation of Burma from British India in 1938-9, its share fell to bare one per cent of the total food grain trade in India. The fine quality rice which was produced primarily for marketing in

this region constituted still lesser percentage of the total rice trade.¹ The rice finding its way to the market mostly came through the conduit of money-lenders or through the compulsions of the subsistence farmer selling their cereals to earn some urgent cash. Therefore to find out the reasons for decline in the rice production it is necessary to enquire into factors like irrigation, soil fertility etc. operating through area under rice crop or its yield per acre rather than market price.

Like rice, barley and maize were also not involved in the trade to any great extent. Maize in Bihar was primarily a poor man's cereals and was used extensively for paying the agricultural labourer. It was invariably grown as mixed crop. The maize production in North Bihar during the fifty year period had three broad phases. Output rate fell till the third quinquennium, to rise moderately in the fourth. After that upto 1926-27, the maize output in North Bihar fluctuated at moderate rates around a steady level. After this output fell and went on falling till the second world war end. Tirhut and Bhagalpur divisions by and large conformed to the regional pattern. In the period upto first world war, the maize production in Patna division was higher than the region and other divisions. In fact, the maize production in North Bihar including its divisions, showed high rates of fluctuation.

Fluctuation is also the main features of the Barley production in North Bihar. It continued till the seventh quinquennium which was the pre-depression period of 1922-23 to 1926-27. After this growth rate of production shows almost no change. Tirhut reflected the regional pattern. The other two divisions showed wider rates of fluctuation.

Wheat and grams are the two foodcrops whose production were most affected by trade. In case of wheat it was primarily export trade and in case of grain it was the internal trade that mattered. The wheat trade was extremely fluctuating in North Bihar (Jather and Beri, 1949 : 139). In the period of famine the local wheat price would shoot up high attracting wheat away from the import market. During the first three decades and half upto seventh quinquennium wheat production fluctuated and at times at high rates. From the eighth quinquennium between 1927-28 to 1931-32 wheat production in North Bihar showed steady decline at moderate rates. After 1920

1. Starting from Buchanan, it had frequently been mentioned that the cultivators of North Bihar, particularly the bigger ones had produced fine quality rice for export to other part of India and also abroad.

wheat export from this region generally declined except in 1938-39 in spite of the imposition of import duty on wheat in 1930 to protect the internal production.

Patna and Bhagalpur division could be described as the representative division of the region. The pattern of fluctuation of its rates was almost identical with the region. Tirhut division showed somewhat different pattern. Till the end of first world war its production showed fairly high rates of fluctuation. After the war, i.e. after the fifth quinquennium, the wheat production in Tirhut division stabilised somewhat.

Gram output rates in North Bihar rose till 1926, i.e. upto the seventh quinquennium. After that it fell continuously. Gram output Patna division too reached its peak in the seventh quinquennium to fall thereafter. The gram production in Tirhut reached its peak in the fifth quinquennium and in Bhagalpur in the sixth. After that it declined at moderate rates. Gram output, in fact, showed high degree of fluctuations in North Bihar and in its divisions.

Sugarcane² output in North Bihar had three distinct period of growth. Till the beginning of the first world war the sugarcane production fell at high rate due to low prices of imported sugar. After the fifth quinquennium i.e. 1912-13 to 1916-17, its output started rising under the stimulus of the war time price rise. The rise was, however at slow rate. This sluggishness in the growth rates of sugarcane output was due to fall in sugar price in the interwar period caused by over production in the principal sugarcane producing countries and dumping of excess sugar in the world market. In 1932 the protection was granted to the Indian sugar which led to increase in the number of factories in North Bihar and increased demand for sugarcane in the home market. In the period between 1932-33 and 41-42, the sugarcane output in North Bihar increased sharply. During the second world war, i.e. in the 10th quinquennium, however, the sugarcane output in North Bihar fell somewhat.

Pattern in the division do not conform to that of the region. In Patna division the sugarcane output fluctuated at moderate rates. The production in Tirhut, on the other hand, showed fluctuations and at high rates. Wide fluctuations at high rates also marked the sugarcane output production in Bhagalpur division during this period. One specific

2. The market price affects the cash crop production more than the foodcrop. A.R. Sinha, H.C. Sinha, J.R. Gupts Thakurata, Dharm Narain, Raj Krishna and Rabbani analysed the effect of prices on individual crops. See on this Bagchi (1972: 102).

feature of sugarcane output in North Bihar and in the division was that it reached its peak in the ninth quinquennium, i.e. 1932-33 to 1936-37, which is actually the post depression period.

Like sugarcane, the production of oilseeds like rape and mustard and linseed were affected by the market condition. The percentage share of export trade of the rape and mustard in last thirty years was positive but declining (Jather and Beri, 1949 : 164).

The quinquennial growth rates, however, showed diverse tendencies. In the fourth quinquennium before the first world war period, the output of rape and mustard increased sharply. The export of oilseed during this period was also increasing (Jather and Beri, 1949 : 150). From the fifth quinquennium to the seventh, the rape and mustard output fluctuated moderately and from the seventh quinquennium onwards its production continuously fell at moderate rate. Patna division did not follow the regional pattern. The rape and mustard production in this division fluctuated throughout at high rates. But the production in Tirhut division followed the regional pattern. The production in Bhagalpur fell steadily after the sixth quinquennium.

For linseed output in North Bihar the period of highest production was the decade between 1917 and 1927. Before that period the production of linseed showed high degree of fluctuations. After the seventh quinquennium the linseed production fell. Patna and Tirhut division by and large follow the regional pattern. But the rates of fluctuations are higher. In Bhagalpur division, the linseed output increased till the sixth quinquennium and then it fell. In the last decade was it rose slightly.

In North Bihar the jute was produced in Bhagalpur and Tirhut divisions only. The jute output had two peaks: one in the fifth quinquennium and the other in the tenth i.e. the second world war period. The inter-war period saw fall in the jute output. The specific feature of jute output was high degree of fluctuations. Jute production on Bhagalpur division matched well with the regional pattern. But Tirhut had different pattern. For Tirhut division the peak period of production was the second and third quinquennia before the first world war period and in the eighth quinquennium.

Two other minor cash crops, til and tobacco, in North Bihar were primarily involved in the local trade. This was particularly so for tobacco. Though til figured in the crop export item, its share was not high and even that was decreasing throughout this century.

In the pre-war period the tobacco output rates in North Bihar decreased by and large, excepting a moderate drop in the fourth quinquennium. The depression and the second world war saw severe slump in the tobacco output in North Bihar.

Patna division differed altogether from the regional pattern. In the period between 1892 and 1927 the tobacco output rates fell continuously except in the fourth quinquennium when it remained constant. But after that its rates fluctuated. The other two divisions, by and large, conformed to the regional pattern, except that in Bhagalpur division its production increased even during the depression unlike in other divisions.

Til production in North Bihar fell at slow rates upto the second world war period with mild fluctuations in the inter-war period. The second world war, however, saw increased til production in North Bihar.

The divisions did not agree with the regional pattern. Their features can thus be summarised: First, The fluctuations in their output are high. Second, til output reached their peak in the first decade of the inter war period and fell thereafter till the eighth quinquennium. The second world war saw moderate rise in till production in the divisions.

Conclusion of this part of the discussion are the following : (1) The longterm trend rate showed that only the production of wheat and gram among the food crops increased. The production of all other food crops, including rice, decreased. (2) The production rate of cash crops such as sugar, rape and mustard, linseed and jute increased during the period. Indigo disappeared and the production of til and tobacco fell. (3) Within this long-term trend, the growth rates of all crops varied from one quinquennium of another. Large fluctuations in production were a basic feature of crop production in North Bihar. (4) The turning decade in the production of food crops was the period between 1907 to 1917; for gram and barley, however, this turning periods were 1922-27 and 1927-31 respectively, after which all them showed declining trend. The positive quinquennial growth indices of wheat and gram showed decline after this turning period. (5) Cash crops in general did well after the first world war. But for sugarcane the real period of growth was the ninth quinquennium in which case the general depression was offset by linkage effect of the high tariffs on imported sugar.

Table 4.1

Annual Percentage Rates of Growth of Individual Crop Outputs
in North Bihar, 1892 - 1941

	Percentage to Total Output	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	46	- 2.1	- 2.4	- 1.4	- 2.4
2. Autumn Rice	6	- 3.4	- 1.5	- 2.8	- 4.3
3. Maize	9	- 1.4	- 2.9	- 1.2	- 1.4
4. Wheat	8	0.3	0.4	0.5	0.3
5. Barley	8	- 0.02	- 0.6	0.3	- 0.8
6. Gram	10	1.6	2.8	0.2	0.7
7. Linseed	4	0.5	2.2	- 0.4	1.4
8. Sugar	3	0.9	1.03	1.5	- 0.4
9. Rape and Mustard	3	0.4	0.5	1.7	- 0.3
10. Til	2	- 2.1	- 3.7	- 0.08	- 1.8
11. Tobacco	1	- 0.8	- 2.4	- 0.4	- 1.3
12. Jute	1	1.5	—	0.9	1.7
13. Indigo	—	- 18.5	—	- 11.9	- 22.3

Note : Indigo production virtually stopped after 1910s.

Table 4.2

Index of Output of Individual Crops in North Bihar
in quinquennium, 1892-93 - 1896-97

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	—	—	—	—
2. Autumn Rice	—	—	—	—
3. Maize	150	291	130	150
4. Wheat	84	100	85	62
5. Barley	67	125	52	81
6. Gram	47	27	94	62
7. Linseed	54	29	80	23
8. Sugar	131	97	166	113
9. Rape and Mustard	57	123	41	58
10. Til	175	121	113	417
11. Tobacco	143	618	123	164
12. Jute	119	—	93	120
13. Indigo	—	—	—	—

Table 4.3

Index of Output of Individual Crops in North Bihar
in quinquennium, 1897-98 - 1901-02

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	—	—	—	—
2. Autumn Rice	—	—	—	—
3. Maize	138	268	131	122
4. Wheat	65	70	65	59
5. Barley	102	119	93	137
6. Gram	35	26	56	41
7. Linseed	41	34	53	24
8. Sugar	105	74	120	139
9. Rape and Mustard	58	122	49	56
10. Til	124	133	66	61
11. Tobacco	125	487	100	154
12. Jute	77	—	216	72
13. Indigo	—	—	—	—

Table 4.4

Index of Output of Individual Crops in North Bihar
in quinquennium, 1902-03 - 1906-07

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	138	151	116	151
2. Autumn Rice	104	108	77	132
3. Maize	98	182	86	97
4. Wheat	80	88	61	97
5. Barley	94	90	89	135
6. Gram	56	34	79	93
7. Linseed	70	66	88	34
8. Sugar	95	95	70	163
9. Rape and Mustard	57	95	40	62
10. Til	105	111	40	107
11. Tobacco	96	378	83	108
12. Jute	127	—	216	124
13. Indigo	—	—	—	—

Table 4.5

Index of Output of Individual Crops in North Bihar
in quinquennium, 1907-08 - 1911-12

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	158	128	220	113
2. Autumn Rice	107	140	81	132
3. Maize	106	241	102	85
4. Wheat	127	181	83	124
5. Barley	91	84	91	105
6. Gram	64	50	88	81
7. Linseed	60	41	67	65
8. Sugar	81	94	71	76
9. Rape and Mustard	105	81	193	64
10. Til	96	76	80	161
11. Tobacco	107	378	98	116
12. Jute	198	—	110	201
13. Indigo	—	—	—	—

Table 4.6

Index of Output of Individual Crops in North Bihar
in quinquennium, 1912-13 - 1916-17

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	131	126	127	142
2. Autumn Rice	111	163	95	124
3. Maize	102	102	110	92
4. Wheat	106	112	90	121
5. Barley	97	106	96	87
6. Gram	88	90	114	67
7. Linseed	94	129	88	70
8. Sugar	93	111	89	59
9. Rape and Mustard	86	129	96	76
10. Til	109	157	86	161
11. Tobacco	90	230	90	88
12. Jute	238	—	129	242
13. Indigo	—	—	—	—

Table 4.7

Index of Output of Individual Crops in North Bihar
in quinquennium, 1917-18 - 1921-22

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	107	107	107	105
2. Autumn Rice	104	119	99	108
3. Maize	75	65	88	58
4. Wheat	86	89	85	83
5. Barley	91	93	87	110
6. Gram	92	96	88	86
7. Linseed	93	98	91	93
8. Sugar	94	100	94	80
9. Rape and Mustard	94	106	86	97
10. Til	127	138	132	106
11. Tobacco	94	167	97	88
12. Jute	147	—	140	148
13. Indigo	—	—	—	—

Table 4.8

Index of Output of Individual Crops in North Bihar
in quinquennium, 1922-23 - 1926-27

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	95	92	108	81
2. Autumn Rice	86	94	80	92
3. Maize	96	106	102	84
4. Wheat	96	106	94	87
5. Barley	98	93	100	89
6. Gram	95	100	94	83
7. Linseed	96	116	94	79
8. Sugar	97	94	106	82
9. Rape and Mustard	96	119	100	92
10. Til	91	81	92	92
11. Tobacco	99	137	104	92
12. Jute	176	—	92	179
13. Indigo	—	—	—	—

Table 4.9

Index of Output of Individual Crops in North Bihar
in quinquennium, 1927-28 - 1931-32

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	93	84	107	86
2. Autumn Rice	73	84	61	85
3. Maize	92	112	98	80
4. Wheat	92	95	95	84
5. Barley	90	88	92	81
6. Gram	84	83	87	83
7. Linseed	61	84	59	39
8. Sugar	100	96	112	78
9. Rape and Mustard	87	136	98	76
10. Til	83	115	84	64
11. Tobacco	119	428	132	97
12. Jute	132	—	262	128
13. Indigo	—	—	—	—

Table 4.10

Index of Output of Individual Crops in North Bihar
in quinquennium, 1932-33 - 1936-37

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	67	65	71	65
2. Autumn Rice	42	84	40	41
3. Maize	78	93	75	80
4. Wheat	88	96	82	86
5. Barley	84	86	84	78
6. Gram	77	78	70	78
7. Linseed	60	83	57	41
8. Sugar	208	168	270	126
9. Rape and Mustard	68	140	86	52
10. Til	78	132	72	71
11. Tobacco	93	187	84	104
12. Jute	108	—	195	105
13. Indigo	—	—	—	—

Table 4.11

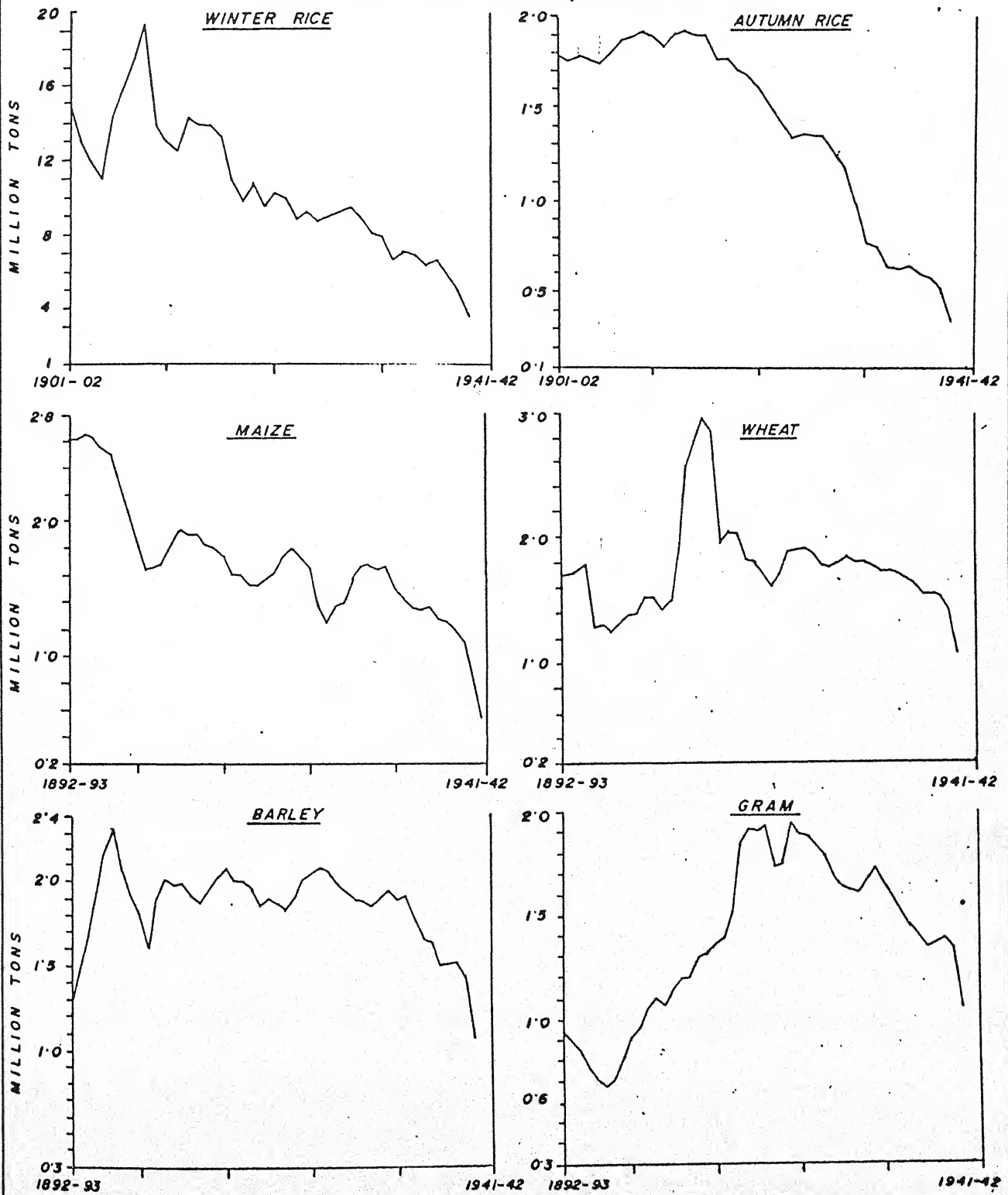
Index of Output of Individual Crops in North Bihar
in quinquennium, 1937-38 - 1941-42

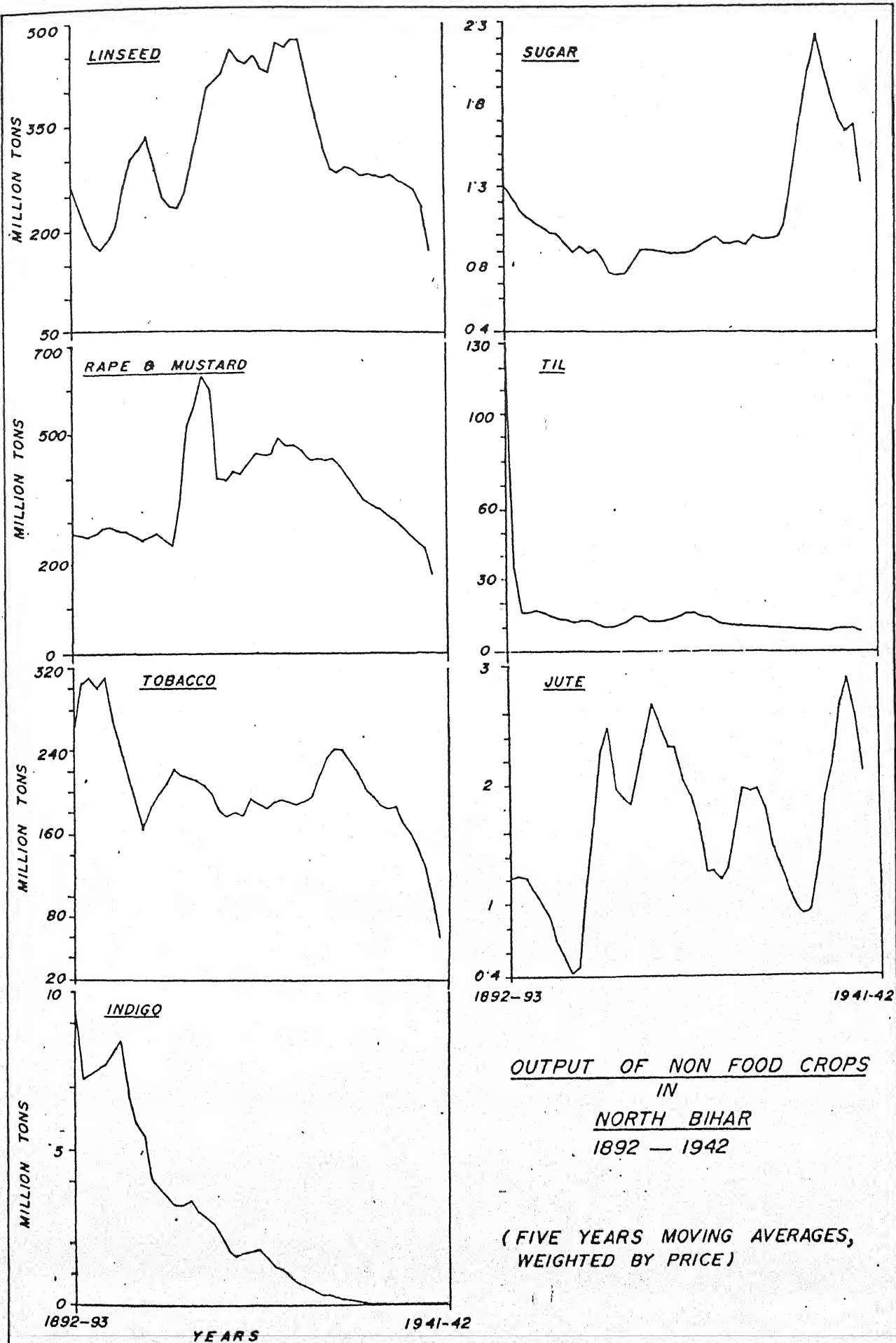
(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	55	52	63	48
2. Autumn Rice	33	84	35	27
3. Maize	68	92	65	38
4. Wheat	79	87	77	1
5. Barley	73	83	71	63
6. Gram	72	68	89	7
7. Linseed	55	68	54	42
8. Sugar	171	129	227	111
9. Rape and Mustard	54	118	79	35
10. Til	83	94	89	58
11. Tobacco	71	185	72	68
12. Jute	281	—	204	284
13. Indigo	—	—	—	—

OUTPUT OF FOOD CROP

(FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE)





4.2 Trends in Individual Crop Acreage

Percentage growth rates of acreage of individual crops in North Bihar in general showed the same pattern as the output growth rates. The only exception was barley for which the acreage growth rate, 0.5 percent, was positive while the output growth rate showed little or no change (Table 4.12). The growth rates of the acreage under the principal food crops like winter and autumn rice and maize were negative. But the rates of growth of acreage under wheat and grain and barley were positive. For the cash crops like sugarcane, rape and mustard, linseed and jute the acreage growth rates were positive. On the other hand, the acreage growth rates for til, tobacco and, of course, indigo were negative in North Bihar.

Patna division conformed to the regional pattern, except in the case of gram. In the later case the annual growth rate of acreage was negative. The situation was same in case of Tirhut division except in case of til, in which case the acreage growth was slightly positive, +0.1. Bhagalpur division has, however, a number of deviations. The acreage under wheat and barley was negative. The acreage under sugarcane and rape and mustard also declined in Bhagalpur division (Table 4.12).

Quinquennial growth rates of winter rice shows that the fifth quinquennium, i.e. the period between 1912-13 and 1916-17, roughly the first world war period, is the turning period. After this quinquennium the acreage under this crop declined steadily. The period before the first world war was the period of recurrent drought and floods.

Tirhut division, by and large, conformed to the regional pattern. In Bhagalpur division the acreage rates showed more fluctuations in the initial quinquennia. After the first world war period the acreage growth rates in Bhagalpur by and large matched the regional pattern. In Patna division the acreage fell steeply till the sixth quinquennium. After that the decline became moderate.

For the autumn rice acreage the turning period was the sixth quinquennium, i.e. the period after the first world war. In the three quinquennia before that the acreage increased slowly. But after the sixth it fell sharply till the second world war.

For the divisions also the sixth quinquennium is the turning period. Before that period the growth rates of acreage under autumn rice increased in all the divisions. In Bhagalpur it had greater fluctuations. After the sixth quinquennium it fell in all the divisions, except in Patna where it increased during the depression and thereafter.

The acreage under maize in North Bihar declined in the first four periods at moderate rates. From the fifth quinquennium onwards it showed moderate fluctuations. Patna, Tirhut and Bhagalpur division showed similar pattern of fluctuations. But the rates of fluctuations are moderate.

Throughout the five quinquennia till the end of first world war the wheat acreage rate increased. After the war it showed fluctuations. Patna division followed the regional pattern. In Tirhut division the acreage growth rate fluctuated initially. After the third quinquennium it increased at slow rates to reach its peak in the sixth quinquennium and then it continued to decline. In Bhagalpur division it increased slowly in the first five quinquennia. After that the acreage rates showed fluctuation.

Acreage growth rate under barley showed three distinct features. Before the first world war the rate was positive. From the first world war onwards it rose slowly till the second world war. During the second world war it declined considerably.

Tirhut reflected closely the regional pattern. The other two divisions showed different pattern. In Patna division it showed fluctuations. After 1927-28, it increased at moderate rates till the end of depression. The depression seemed to have had no impact on the area under barley. In Bhagalpur division the acreage under barley showed fluctuations reaching its lowest level in the fifth quinquennium.

Growth of acreage under gram had three stages: In the period before the first world war period it showed considerable fluctuations. Since the first world war period it started rising till the seventh quinquennium and then stabilised for the rest of the period. Gram acreage rate in Patna division reflected the regional pattern closely. In the other two divisions it showed high rates of fluctuations.

In North Bihar in the twentieth century the sugarcane increasingly replaced indigo as the main cash crop in the region, the jute crop being confined only in the Bhagalpur region. Like all cash crops, the sugarcane acreage in North Bihar responded to the market prices, the tariff policy and by the conditions in the indigo cultivation.

From this perspective the pattern of sugarcane acreage growth in North Bihar falls into four broad periods. First, in the period before the first world war the acreage under sugarcane declined in the face of fall in sugarcane prices caused by import of sugar from Java and Mauritius. Second, during the first world war, the acreage under sugarcane rose considerably under the stimulus of continued rise in prices. Third, in the sixth

quinquennium, however, the area under sugarcane shrank considerably in North Bihar. This development was somewhat in contrast to the all-India situation³ where sugarcane acreage and production remained more or less stable. During this period the North Bihar sugarcane growing regions were affected by widespread drought and outbreak of the influenza and beri-beri which affected the poor peasants of North Bihar who were the main sugarcane producers in their region under the control of the erstwhile indigo planters. Fourth, in the seventh quinquennium and particularly from the eighth quinquennium onwards there was virtual spurt in the acreage under sugarcane in North Bihar. This was largely due to increase in the number of sugar factories in the region following the protection granted to it in 1931 and consequent rise in the demand for sugarcane and its prices in the local market.

Three divisions show three different pattern. In Patna division the acreage increased till the end of the first world war; it fell sharply in the next two quinquennia, and then it showed wide fluctuations. In Tirhut division the acreage fell till the fourth quinquennium. After that it rose continuously. In Bhagalpur division the acreage fell till the end of the first world war and then fluctuated upto the end of eighth quinquennium. During the depression and during the second world war the acreage increased moderately.

The acreage under rape and mustard in North Bihar increased slowly from 1892 to reach its peak in the sixth quinquennium, i.e. 1917-18 to 1921-22. After that the acreage declined. Both Tirhut and Bhagalpur followed the regional pattern. In Patna division, except some moderate fluctuations in the period between 1907 and 1922, the acreage maintained steady growth.

Linseed acreage in North Bihar was marked by high rates of fluctuations between 1892 and 1922 and then onward it generally increased to its peak in the seventh quinquennium. After that it declined steadily.

In Patna division the linseed acreage showed high rates of fluctuation in the first three decades, reaching its peak in the seventh quinquennium and remain more or less constant for the rest of the period. For the other two divisions the peak period is the sixth quinquennium. After the peak the linseed acreage declined in these two divisions.

3. See Jather and Beri (1949 :145). See also Bagchi. Bagchi's analysis of sugarcane begins from 1901, Bagchi (1972 :102-111)

Growth of acreage under tobacco in North Bihar can be divided into two district stages. In the first five quinquennia, it declined. After that it increased, while fluctuating at moderate rates from one period to another.

Both Tirhut and Bhagalpur division reflected fairly closely the regional pattern, except in the last two quinquennia in case of Tirhut and the last quinquennium in case of Bhagalpur division. The acreage in Tirhut declined considerably during the depression and the second world war. In Bhagalpur division it fell during the war. The acreage growth in Patna division fell continuously till the seventh quinquennium. Thereafter it rose to fell again in the depression period.

The acreage under til showed fluctuations. It rose during the depression and remained stable at that level during the war. For divisions their salient feature was high rates of fluctuation and this was particularly marked in case of Bhagalpur division.

Conclusions from the above discussion can now be put together. The trend rates of area of the foodcrop showed that the area under winter and autumn rice and maize declined. The trend rates of wheat and gram showed increase. In the case of barley the trend growth rate of area were positive, 0.5 percent, though the output trend rate showed little or no change. For the cash crops like sugarcane, rape and mustard, linseed and jute the trend growth rates were positive. Only cash crop which showed negative trend growth rate were til and tobacco.

Quinquennial rates of these crops give out certain other features of the growth of areas under these crops. For the important winter and autumn rice crop the crucial period in the growth of areas under them was the decade between 1917 to 1927 after which it declined. For the area under wheat crop the turning period was the period between 1927 and 1931 after which it declined. On the other hand, barley showed steady rise since the first world war period. For gram the period of accelerated growth was the fifth quinquennium.

For the cash crops like sugarcane the crucial period is the period between 1922 and 1926, i.e. the first world war. After this period, the area under sugarcane in North Bihar accelerated in spite of fluctuation. For rape and mustard the turning period is 1922-23 to 1926-27 and for linseed it is 1927-28 to 1931-32 after both declined. The quinquennial growth rates of tobacco area since that period showed

Table 4.12
Annual Percentage Rates of Growth of Individual Acreage
in North Bihar, 1892-1941

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	- 0.9	- 1.3	- 0.3	- 0.9
2. Autumn Rice	- 1.5	- 0.12	- 0.3	- 2.9
3. Maize	- 0.5	- 1.4	- 0.08	- 0.7
4. Wheat	0.13	0.4	0.16	- 0.2
5. Barley	0.5	0.7	0.8	- 0.8
6. Gram	1.5	- 3.2	0.11	0.23
7. Linseed	0.9	1.8	0.11	3.06
8. Sugar	1.01	1.6	1.5	- 1.7
9. Rape and Mustard	0.6	0.4	1.7	- 0.04
10. Til	- 1.6	- 3.2	0.12	- 0.7
11. Tobacco	- 0.4	- 1.7	- 0.2	- 0.5
12. Jute	1.7	—	1.12	1.8
13. Indigo	- 12.6	—	- 12.7	- 19.9

Note : As in table 4.1

Table 4.13

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1892-93 - 1896-97

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	—	—	—	—
2. Autumn Rice	—	—	—	—
3. Maize	115	146	83	171
4. Wheat	90	89	86	97
5. Barley	64	83	48	138
6. Gram	67	32	115	122
7. Linseed	56	57	70	20
8. Sugar	134	94	138	224
9. Rape and Mustard	53	99	40	54
10. Til	820	104	98	219
11. Tobacco	165	704	151	173
12. Jute	79	—	131	78
13. Indigo	258	—	—	—

Table 4.14

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1897-98 - 1901-02

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	—	—	—	—
2. Autumn Rice	—	—	—	—
3. Maize	109	145	86	142
4. Wheat	95	93	93	99
5. Barley	93	78	90	136
6. Gram	48	30	81	72
7. Linseed	54	59	65	22
8. Sugar	110	75	102	226
9. Rape and Mustard	52	99	42	51
10. Til	106	86	62	50
11. Tobacco	139	416	123	155
12. Jute	59	—	131	57
13. Indigo	299	—	8	180

Table 4.15

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1902-03 - 1906-07

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	121	144	102	126
2. Autumn Rice	93	78	77	108
3. Malze	97	147	76	123
4. Wheat	94	98	79	109
5. Barley	100	83	99	143
6. Gram	55	33	87	89
7. Linseed	77	64	97	41
8. Sugar	94	90	68	195
9. Rape and Mustard	59	93	44	62
10. Til	108	86	49	111
11. Tobacco	101	207	95	104
12. Jute	150	—	131	151
13. Indigo	215	—	4	127

Table 4.16

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1907-08 - 1911-12

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	103	131	90	93
2. Autumn Rice	95	101	79	108
3. Malze	93	156	78	102
4. Wheat	104	106	82	130
5. Barley	90	80	92	99
6. Gram	57	43	82	76
7. Linseed	67	50	73	71
8. Sugar	85	101	67	104
9. Rape and Mustard	73	85	81	67
10. Til	87	115	60	167
11. Tobacco	96	241	92	98
12. Jute	186	—	131	188
13. Indigo	265	—	3	76

Table 4.17

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1912-13 - 1916-17

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	111	118	102	115
2. Autumn Rice	97	116	96	97
3. Maize	101	109	97	108
4. Wheat	111	106	94	139
5. Barley	95	95	96	92
6. Gram	81	82	89	72
7. Linseed	88	103	85	77
8. Sugar	114	168	78	91
9. Rape and Mustard	86	108	98	77
10. Til	100	108	77	174
11. Tobacco	93	211	93	92
12. Jute	196	—	116	198
13. Indigo	143	—	1	77

Table 4.18

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1917-18 - 1921-22

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	101	97	104	101
2. Autumn Rice	100	109	96	103
3. Maize	91	80	92	93
4. Wheat	95	91	99	94
5. Barley	97	92	98	100
6. Gram	93	92	97	94
7. Linseed	97	93	99	100
8. Sugar	93	98	89	94
9. Rape and Mustard	98	102	100	97
10. Til	116	143	112	114
11. Tobacco	104	187	107	99
12. Jute	121	—	127	120
13. Indigo	121	—	1	50

Table 4.19

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1922-23 - 1926-27

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	95	99	98	89
2. Autumn Rice	92	97	90	93
3. Maize	94	93	91	101
4. Wheat	102	106	96	104
5. Barley	96	90	97	100
6. Gram	97	99	92	95
7. Linseed	99	117	92	95
8. Sugar	97	91	102	94
9. Rape and Mustard	96	110	91	97
10. Til	93	104	88	105
11. Tobacco	104	148	106	102
12. Jute	153	—	90	155
13. Indigo	40	—	—	22

Table 4.20

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1927-28 - 1931-32

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	94	93	99	88
2. Autumn Rice	80	81	79	81
3. Maize	97	97	92	107
4. Wheat	103	110	98	102
5. Barley	96	99	96	98
6. Gram	96	97	88	97
7. Linseed	90	115	84	72
8. Sugar	133	188	103	89
9. Rape and Mustard	79	110	85	72
10. Til	89	108	85	92
11. Tobacco	121	286	127	109
12. Jute	129	—	244	126
13. Indigo	11	—	—	13

Table 4.21

Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1932-33 - 1936-37

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	90	94	87	89
2. Autumn Rice	57	88	67	46
3. Maize	98	89	84	132
4. Wheat	100	111	90	101
5. Barley	102	106	101	98
6. Gram	98	99	85	103
7. Linseed	82	115	71	70
8. Sugar	165	140	200	115
9. Rape and Mustard	65	113	79	53
10. Til	96	116	91	100
11. Tobacco	123	258	108	138
12. Jute	123	—	184	121
13. Indigo	2	—	—	—

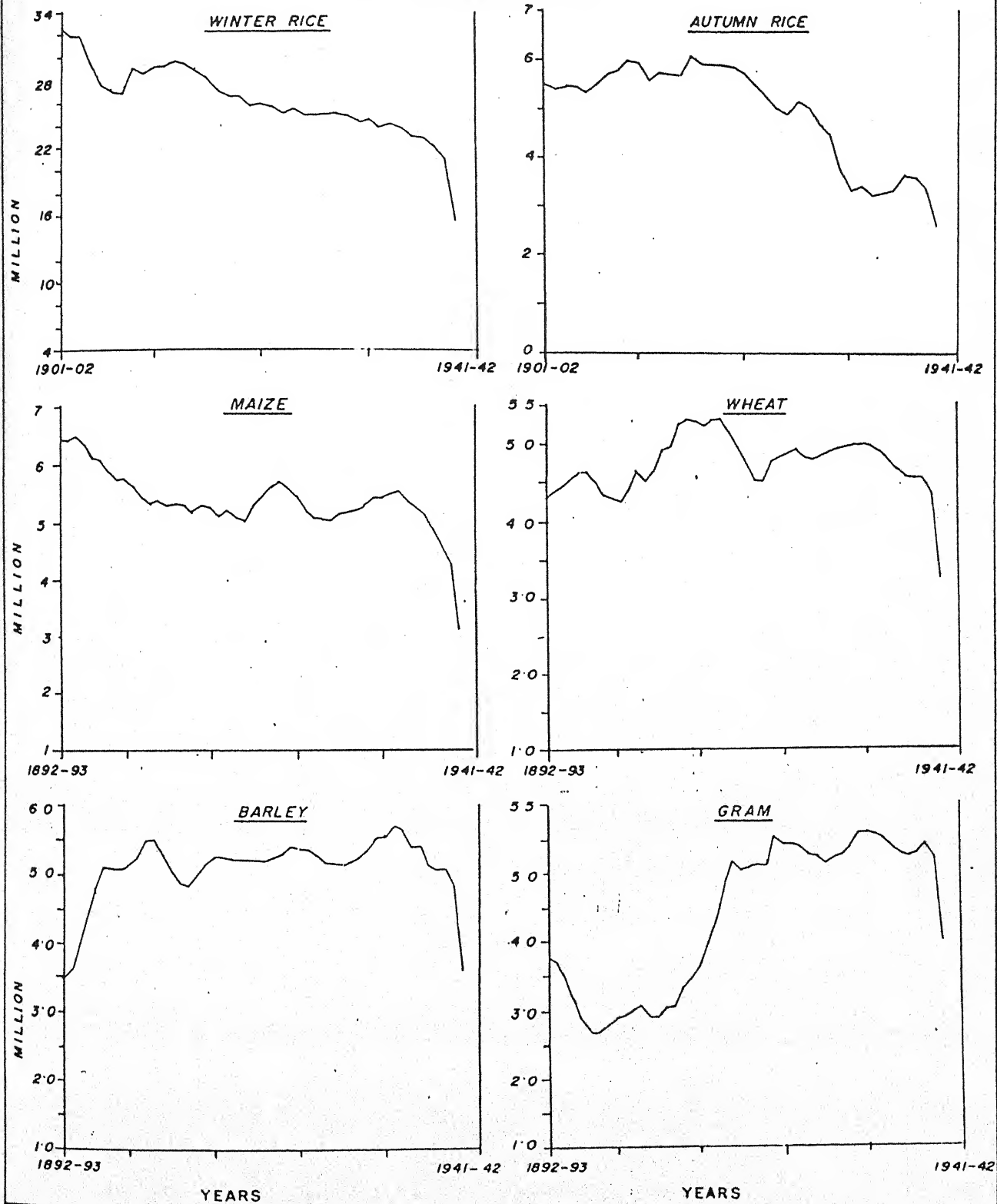
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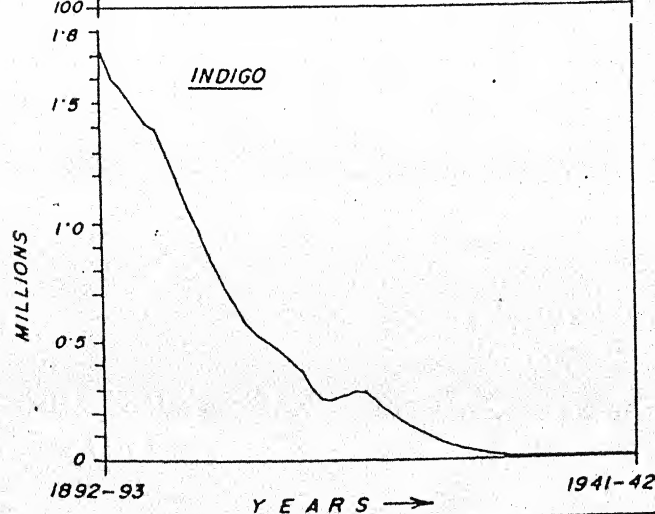
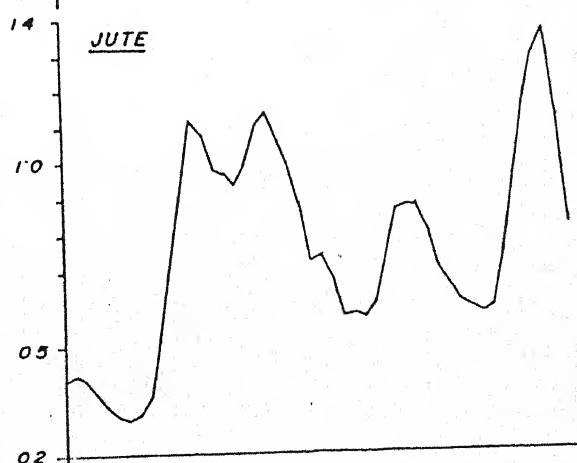
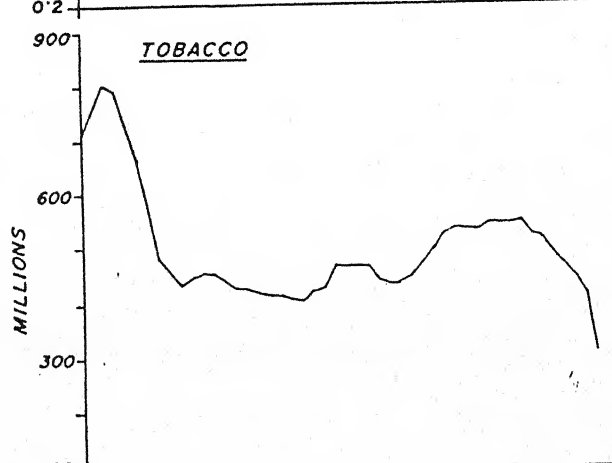
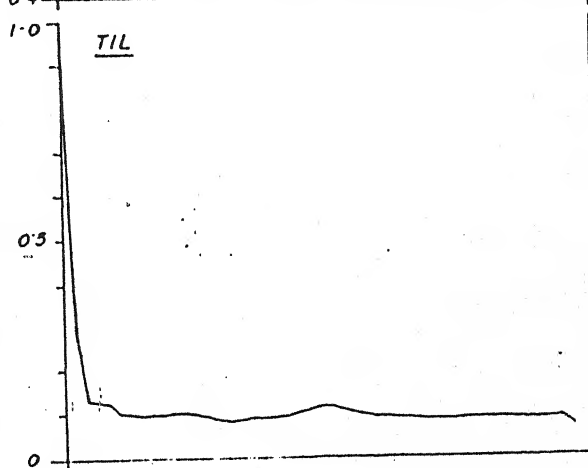
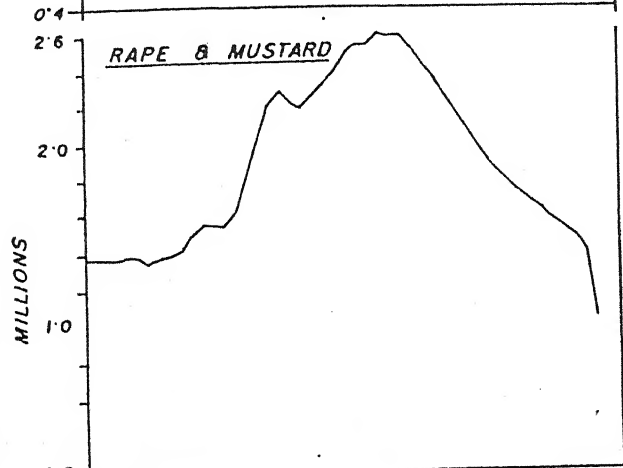
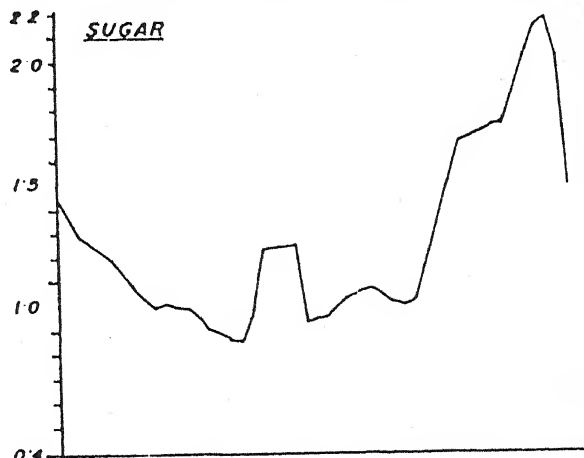
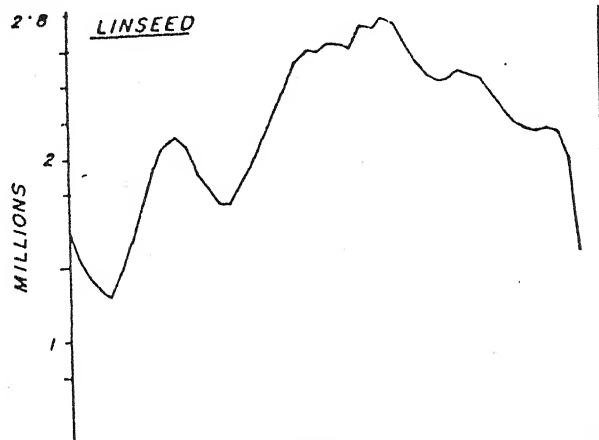
Index of Acreage of Individual Crops in North Bihar
in quinquennium, 1937-38 - 1941-42

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	83	84	85	79
2. Autumn Rice	59	90	80	39
3. Maize	82	93	66	111
4. Wheat	95	108	86	90
5. Barley	94	105	90	99
6. Gram	98	94	117	95
7. Linseed	78	98	67	83
8. Sugar	203	206	224	124
9. Rape and Mustard	57	113	77	41
10. Til	97	100	98	90
11. Tobacco	102	274	103	99
12. Jute	253	—	221	254
13. Indigo	3	—	—	—

ACREAGE OF FOOD CROP
(FIVE YEARS MOVING AVERAGE)





ACREAGE OF NON FOOD CROPS
IN
NORTH BIHAR
1892 - 1942

(Five years moving averages)

considerable variations while generally increasing. For til, the quinquennial rates had no such definite turning point and were highly fluctuating.

4.3 Trends in Yield per acre

The trend growth rate of yield per acre of all the crops in North Bihar, except wheat, was negative. In case of wheat the yield per acre rate was 0.2 percent.

In Patna division the yield per acre rates for all the crop except linseed and rape and mustard were negative. In case of the later two crops the rate was 0.4 per cent. The trend rate of yield per acre of wheat crop was also negative. In Tirhut division, the yield per acre rate of only wheat and gram was positive. Except indigo, the rates for all the cash crops were negative. In Bhagalpur division, barley and gram and sugarcane showed positive growth rate of yield per acre. The rest of the crops had negative rates of yield per acre. Interestingly, this was the only division where the trend growth rate of yield per acre of sugarcane was positive.

The yield per acre of winter rice for the North Bihar as a whole declined continuously after the first world war at steady rates. The rate of decline during the depression was higher. Divisional rates followed the general pattern of the region with some exception in the fourth and fifth quinquennia. In these two periods the yield per acre rates in Tirhut division fluctuated at very high rates. The fluctuations in Patna and Bhagalpur were more moderate.

In case of autumn rice the yield per acre of North Bihar showed high rates of fluctuations in the initial three quinquennia, moderate rates of decline in the inter-war period and accelerated rates of decline in the last two quinquennia which were the depression and second world war period respectively.

Tirhut division by and large followed the regional pattern. Patna division followed the regional pattern till the seventh quinquennium. But after that there was deceleration in the rates of decline in its yield per acre rates, with a moderate rise in the eighth quinquennium. In Bhagalpur division the yield per acre in the division declined all through the ten quinquennia at an accelerated rates.

In case of maize the quinquennial rates showed high degree of fluctuations. Both Tirhut and Bhagalpur division showed virtually the same rates of fluctuations. Patna division showed higher fluctuations.

Quinquennial rates of wheat crop has two distinct stages of growth. The first stage was upto the fifth quinquennium during which period it showed fluctuations. After the sixth quinquennium onwards, however, the growth rates showed only slight but steady decline. Quinquennial rates of all the four divisions by and large reflected the regional pattern except that in the initial five quinquennia the rates of fluctuations in all the divisions were higher than the region.

Quinquennial rates of the yield per acre of barley in North Bihar showed fluctuations till the seventh quinquennium. From the eighth quinquennium it fell steadily. All the divisions showed the same pattern.

In case of grams the quinquennial rates of the yield per acre till the fourth quinquennium increased often at accelerated rates. After the fifth quinquennium it fell at more uniform rates, except in the seventh quinquennium when it remained the same. Quinquennial growth rates in Patna and Bhagalpur division reflected the regional rates with minor deviations. On the other hand, Tirhut division showed high fluctuation, reaching its peak in the fifth quinquennium.

Quinquennial rates of sugarcane yield per acre for North Bihar showed two phases. In the first seven quinquennia the rates fluctuated moderately, remaining unchanged in the seventh. In the next three quinquennia the rates fluctuated sharply. This was particularly so in the depression and during the second world war. Pattern in the Patna division showed similar phases as in the region. The rates in Tirhut in the first three quinquennia declined; from fourth to ninth increased; in the last period during the second world war, it declined considerably. In Bhagalpur division the quinquennial rates increased till the ninth quinquennium at varying rates. During the second world war, however, the rate fell sharply.

For linseed the yield per acre rates in North Bihar was marked by high rates of fluctuations till the eighth quinquennium. During the great depression and in the second world war, it did not fluctuate much. Both Patna and Tirhut divisions showed similar pattern of fluctuations in their rates. The rates in Bhagalpur division decreased generally.

Details of quinquennial growth rates of rape and mustard showed high degree of fluctuations. As for divisions, two things can, however, be noted : First, they showed higher rates of fluctuations, particularly during the interwar period. This was particularly

Table 4.23

Annual Percentage Rate of Growth of Individual Crop Yield per Acre
in North Bihar, 1892 - 1941

	Percentage to Total Output	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	46	- 1.22	- 1.04	- 1.06	- 1.3
2. Autumn Rice	6	- 1.83	- 1.3	- 2.5	- 1.4
3. Maize	9	- 0.97	- 1.4	- 1.08	- 0.7
4. Wheat	8	0.2	- 0.07	0.4	0.4
5. Barley	8	- 0.05	- 1.2	- 0.4	0.01
6. Gram	10	0.02	- 0.4	0.1	0.4
7. Linseed	4	0.5	0.4	- 0.5	- 1.6
8. Sugar	3	0.04	- 0.5	- 0.01	1.3
9. Rape and Mustard	3	0.16	0.4	- 0.02	- 0.3
10. Til	2	- 0.48	- 0.5	- 0.2	- 1.2
11. Tobacco	1	- 0.4	- 0.6	- 0.1	- 0.8
12. Jute	1	0.2	—	- 0.1	- 0.1
13. Indigo	—	- 6.6	—	0.8	- 18.1

Note : As in Table 4.1

Table 4.24

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1892-93 to 1896-97

(Base : 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	—	—	—	—
2. Autumn Rice	—	—	—	—
3. Maize	131	200	157	90
4. Wheat	92	111	100	63
5. Barley	103	148	107	58
6. Gram	70	87	81	50
7. Linseed	95	51	114	115
8. Sugar	97	101	119	50
9. Rape and Mustard	108	125	103	108
10. Til	97	117	92	89
11. Tobacco	86	86	81	94
12. Jute	149	—	71	153
13. Indigo	288	—	76	225

Table 4.25

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1897-98 to 1901-02

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	—	—	—	—
2. Autumn Rice	—	—	—	—
3. Maize	99	186	152	88
4. Wheat	68	74	69	59
5. Barley	108	150	102	110
6. Gram	72	87	68	57
7. Linseed	77	57	84	109
8. Sugar	96	98	115	62
9. Rape and Mustard	111	122	114	109
10. Til	118	155	106	147
11. Tobacco	91	119	81	111
12. Jute	131	—	164	128
13. Indigo	280	—	106	302

Table 4.26

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1902-03 to 1906-07

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	112	105	113	115
2. Autumn Rice	111	138	100	121
3. Maize	79	123	114	81
4. Wheat	85	92	77	89
5. Barley	93	108	90	93
6. Gram	102	104	91	103
7. Linseed	91	103	89	88
8. Sugar	100	105	102	84
9. Rape and Mustard	97	102	90	99
10. Til	97	130	82	96
11. Tobacco	95	94	87	103
12. Jute	69	—	164	64
13. Indigo	294	—	68	294

Table 4.27

Index of Yield of Individual Crops in North Bihar
in quinquennium, 1907-08 to 1911-12

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	144	94	220	116
2. Autumn Rice	56	69	51	60
3. Maize	89	155	131	85
4. Wheat	119	152	100	94
5. Barley	101	103	99	107
6. Gram	112	116	108	107
7. Linseed	88	80	88	90
8. Sugar	94	93	104	73
9. Rape and Mustard	132	90	199	92
10. Til	108	72	131	91
11. Tobacco	111	111	106	117
12. Jute	102	—	74	103
13. Indigo	269	—	122	299

Table 4.28

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1912-13 to 1916-17

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	118	108	122	123
2. Autumn Rice	114	139	99	132
3. Maize	79	94	113	87
4. Wheat	95	104	95	86
5. Barley	101	110	100	94
6. Gram	107	106	129	91
7. Linseed	107	121	103	92
8. Sugar	93	95	113	65
9. Rape and Mustard	99	118	97	99
10. Til	109	143	112	90
11. Tobacco	96	111	97	93
12. Jute	125	—	110	126
13. Indigo	306	—	114	237

Table 4.29

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1917-18 to 1921-22

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	105	109	102	105
2. Autumn Rice	103	106	103	104
3. Maize	64	79	96	64
4. Wheat	90	96	86	88
5. Barley	93	99	89	109
6. Gram	97	102	90	89
7. Linseed	95	101	92	92
8. Sugar	100	101	106	83
9. Rape and Mustard	95	104	85	99
10. Til	109	98	117	92
11. Tobacco	90	105	91	89
12. Jute	117	—	108	117
13. Indigo	379	—	95	289

Table 4.30

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1922-23 to 1926-27

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	99	93	109	89
2. Autumn Rice	93	97	88	98
3. Maize	80	114	112	86
4. Wheat	94	100	97	84
5. Barley	102	103	103	89
6. Gram	97	101	103	86
7. Linseed	96	99	101	81
8. Sugar	100	108	103	87
9. Rape and Mustard	100	108	109	94
10. Til	97	78	104	85
11. Tobacco	94	95	97	90
12. Jute	112	—	100	113
13. Indigo	963	—	120	922

Table 31

Per acre
 Index of Yield of Individual Crops in North Bihar
 in quinquennium,
 1927-28 to 1931-32

(Base 1920-21 to 1922-23)

Crop	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	99	89	108	98
2. Autumn Rice	90	101	75	127
3. Maize	75	116	107	78
4. Wheat	89	86	97	82
5. Barley	93	88	96	82
6. Gram	87	85	99	85
7. Linseed	67	72	70	55
8. Sugar	79	63	108	87
9. Rape and Mustard	109	123	115	105
10. Til	93	110	99	68
11. Tobacco	98	86	103	89
12. Jute	100	-	103	99
13. Indigo	3368	-	153	ERR

Table 4.32

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1932-33 to 1936-37

(Base : 1920-21 to 1922-23)

	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	74	69	80	73
2. Autumn Rice	73	96	60	85
3. Maize	62	105	89	62
4. Wheat	87	86	90	85
5. Barley	82	81	82	79
6. Gram	78	78	82	75
7. Linseed	73	72	80	59
8. Sugar	126	138	132	110
9. Rape and Mustard	103	125	108	97
10. Til	81	114	79	70
11. Tobacco	76	73	78	75
12. Jute	85	—	104	83
13. Indigo	—	—	—	—

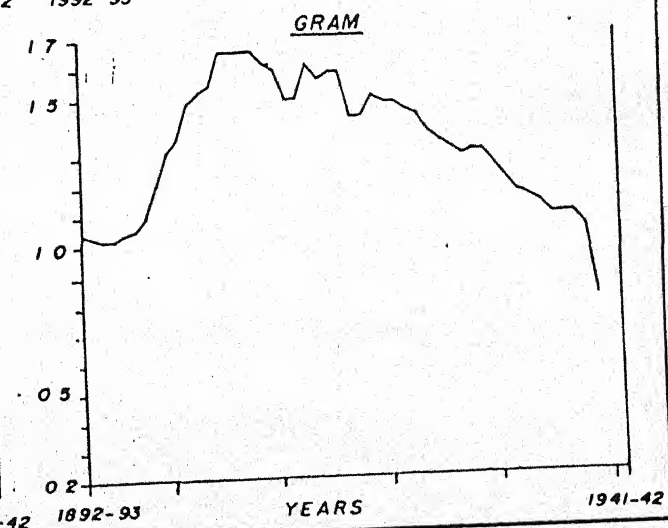
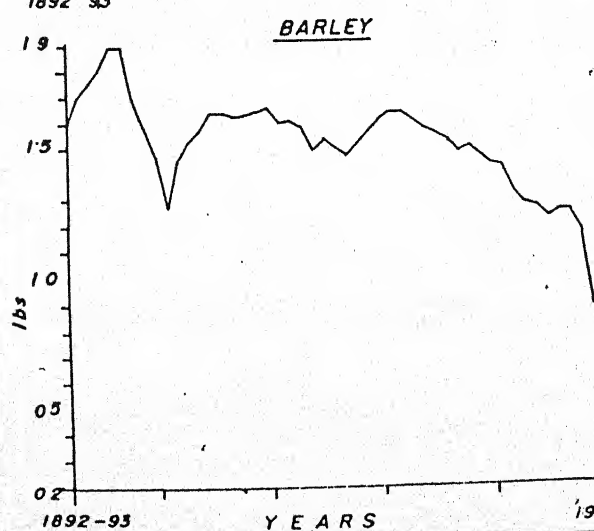
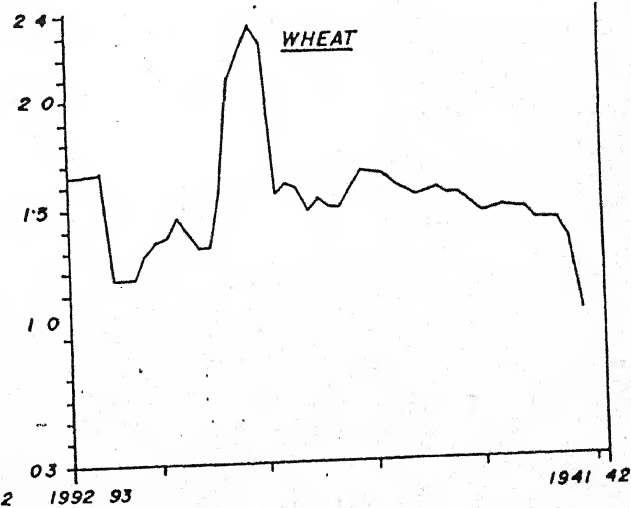
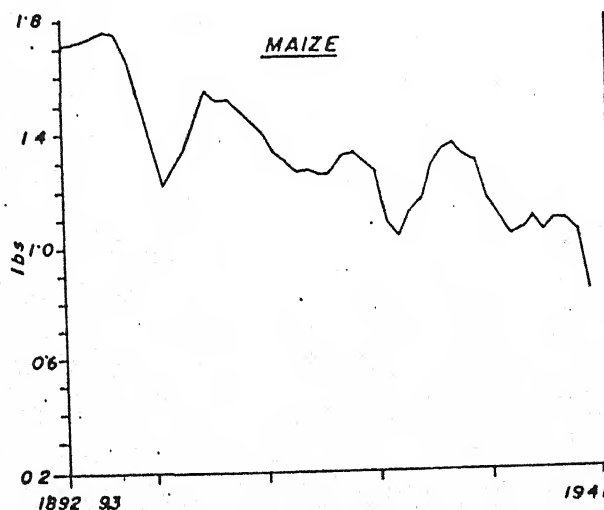
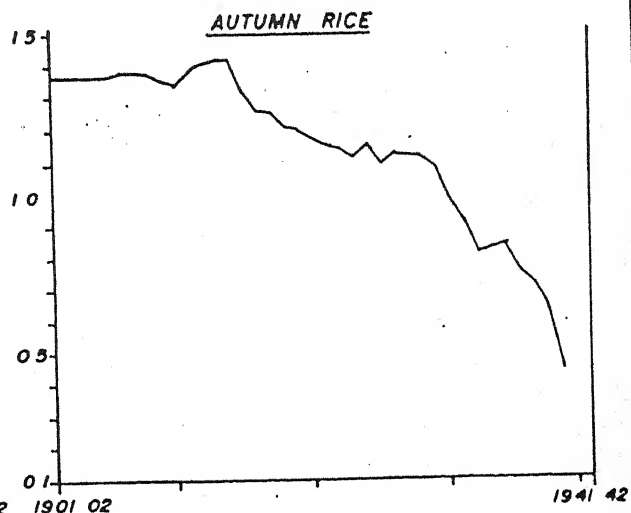
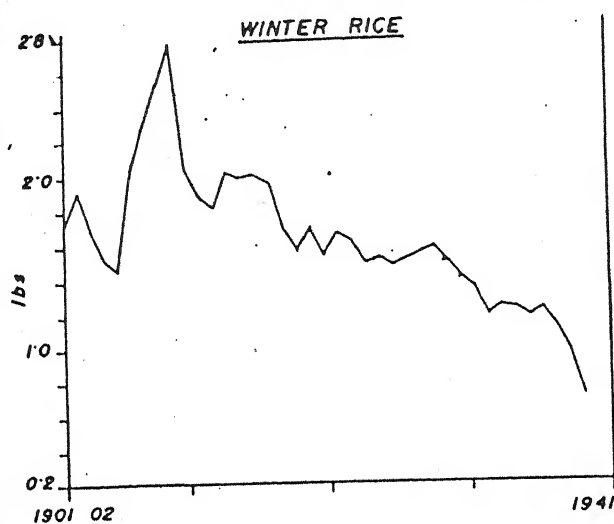
Table 4.33

Index of Yield Per Acre of Individual Crops in North Bihar
in quinquennium, 1937-38 to 1926-27

(Base : 1920-21 to 1922-23)

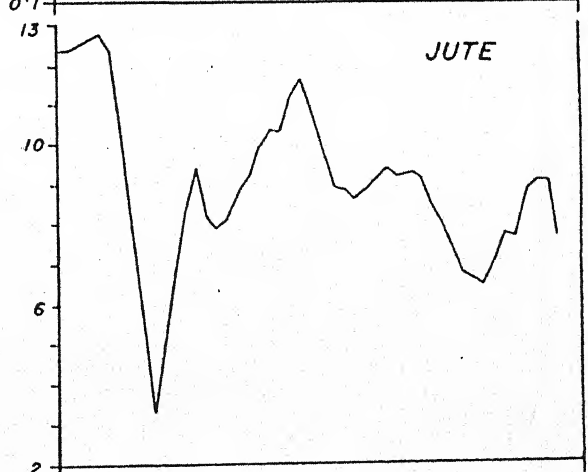
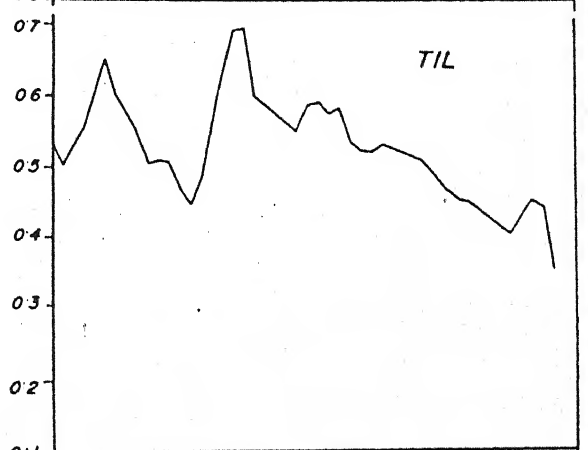
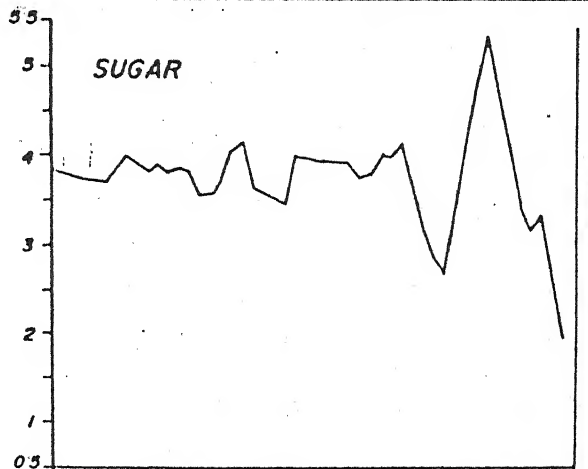
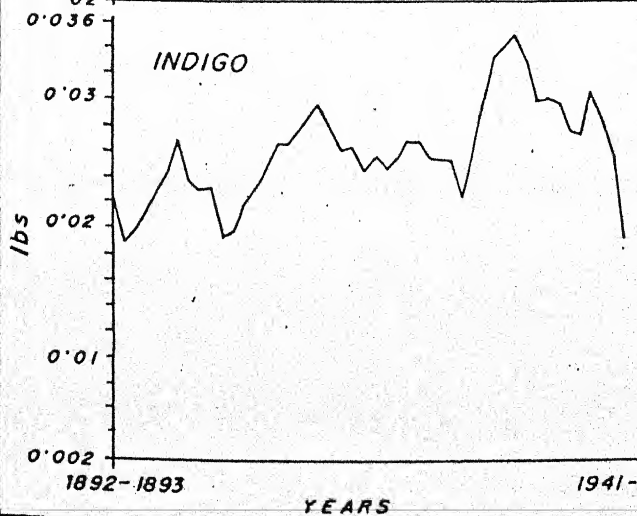
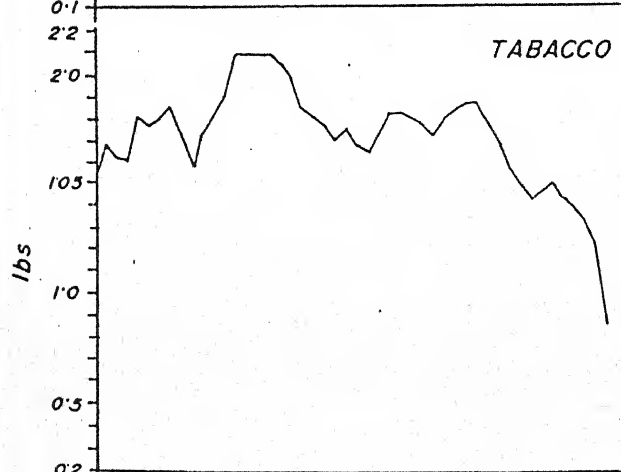
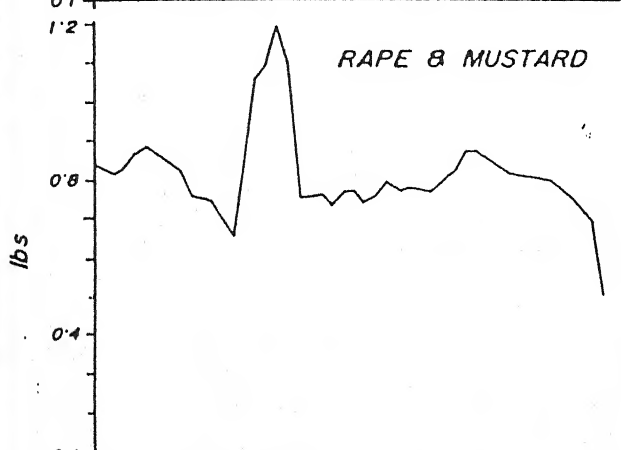
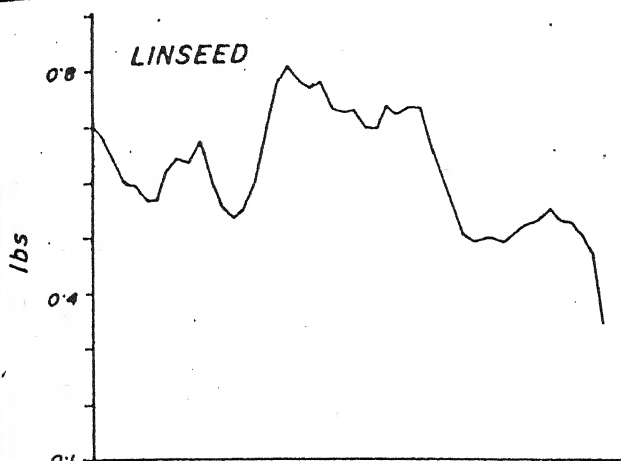
	North Bihar	Patna Division	Tirhut Division	Bhagalpur Division
1. Winter Rice	66	62	74	61
2. Autumn Rice	58	94	48	69
3. Maize	65	99	98	63
4. Wheat	83	80	89	79
5. Barley	77	79	79	69
6. Gram	74	72	77	74
7. Linseed	70	69	80	52
8. Sugar	85	75	101	88
9. Rape and Mustard	94	104	102	85
10. Til	85	93	89	63
11. Tobacco	69	68	70	67
12. Jute	112	—	93	113
13. Indigo	—	—	—	—

YIELD OF FOOD CROP PER ACRE
(FIVE YEARS MOVING AVERAGE, WEIGHTED BY PRICE)



YEARS

YEARS



YIELD PER ACRE
OF
NON FOOD CROPS
IN
NORTH BIHAR
1892 1942

(FIVE YEARS MOVING AVERAGE,
WEIGHTED BY PRICE)

so in case of the Patna division. Second, most of these divisions showed sharp fall in their rates during the depression and second world war, except in Patna division during the ninth quinquennium when it experienced mild increase.

Quinquennial growth rates of yield per acre of jutes showed high rates of fluctuation. During the first and second world war the rates had increased significantly under the impact of high market prices. In North Bihar the primary jute growing regions were Bhagalpur and Tirhut division. Bhagalpur division closely matched the regional pattern. Tirhut division, however, showed two important deviations: First it showed high rates of increase and decrease in its yield in the four quinquennia before the first world war. Second, it showed a general fall in the productivity rates of the jute crop in the region.

Quinquennial rates of yield per acre of Tobacco in North Bihar showed moderate fluctuations while falling generally. Tirhut and Bhagalpur by and large conformed to the regional pattern. In Patna division, on the other hand, the rates fluctuated till the end of the first world war and thereafter it fell continuously till the tenth quinquennium.

Yield per acre rates for til show fluctuated moderately in the initial period. In the later stage, till the beginning of the second world war, it decreased. The rates in Patna division, on the other hand, showed very high degree of fluctuations throughout the period. The other two divisions by and large followed the regional pattern.

The yield per acre, therefore, has the following pattern: First, the annual percentage growth rates of yield per acre of all the crops except wheat were negative. In case of wheat the rate 0.2 per cent was only barely positive. Second, in the division also the rates were mostly negative, only exceptions were in the case of rape and mustard in Patna division, wheat and indigo in Tirhut division; and wheat, barley and gram in Bhagalpur division for which the rates were barely positive. Third, the specific feature of the per acre productivity of the crops in North Bihar was the periodic fluctuation.

Conclusions in this chapter can, therefore, be summed up: First, the annual percentage rate of growth of output of individual crops showed the following things : a) for the winter rice, autumn rice, maize, and also minor food crops like barley, the annual percentage rate of growth of their production was negative; b) for wheat and gram the rates were barely positive; c) for sugar, linseed, rape and mustard and jute the annual percentage growth rates of their production were positive; d) For til, tobacco and indigo, the rates were negative. The indigo cultivation disappeared in the 1910.

Second, the annual percentage growth rate of area had the following feature :

a) First, the annual percentage growth rates of area of winter rice, autumn rice and maize were negative; b) for as wheat, barley, and gram the rates were barely positive; c) Third, among the cash crops the growth rates for sugarcane, linseed, rape and mustard and jute were positive; and d) fourth, for the cash crops like til, tobacco and indigo the rates were negative.

Third, yield per acre rate for the crops were negative except in case of wheat which was barely positive.

Fourth, quinquennial growth rates of the output and also area showed three things : a) First, the rates showed fluctuations from one period to another; b) the turning point in the growth of area and output of major crops including rice and wheat was the decade between 1907 and 1917. In case of sugarcane production the upturn was evident from the period between 1907-08 to 1911-12. But the real spurt was in the period between 1932-33 and 1936-37.

Chapter V

VILLAGE FUNCTIONARIES

In this chapter we examine the nature of the labour process in North Bihar during the colonial period. In the Marxist conception of the labour process there are three basic elements : (a) work (activity) (b) nature and (c) tools (Marx, 1976 : 284; Althusser and Balibar, 1968 : 241). The way they unite determines the real relations of the production process.

At the theoretical level, a specific relation of production is usually identified with a specific form of labour process; e.g. slave labour with slavery ; serf with the feudal society; and free labour with the capitalist relation. While at the theoretical abstract level this identification is perfectly acceptable, in real social formations, particularly in transitional ones, many of these different forms of labour co-exist.

In the rural societies of North Bihar one finds simultaneous existence of (a) family labour, (b) bonded labour, (c) artisans and cultivators working as agricultural labour and (d) casual labour. These various forms of labour have their own specificity. At the same time they often overlap. The nature of their material relation depends on the concrete situation of the society under study. For example, if a rural society is subjected to the process of capitalist style differentiation then family forms will disintegrate and family labour will join the ranks of free labour. If, on the other hand, the process of differentiation remains stunted for some reasons then free farm labour might on the other hand lease in land and join the ranks of family labour or, failing that, they might opt for the life of bonded labour. The direction and nature of such changes is determined by the relative positions of classes and changes in those positions as a result of economic and social changes and class conflicts (Brenner, 1987).

In transitional peasant societies certain specific features may be observed. First, the labour market remains fragmented. Second, in such labour markets the market relations, often thrust from above, co-exist with non-market relations, each affecting the other in this co-existence. Third, it is marked by a dominant presence of family labour, which (Bloch, 1967 : 230-243; Bharadwaj, 1974) has pertinently been described as the preserve of natural economy. Fourth, diverse forms, mode and type of allowances and wage payments characterise this labour market.

In recent times there has been tremendous proliferation of literature on the study of rural labour and labour market in this country.¹ Benoy Choudhury (1982) has made detailed study of the system of agricultural labour in Eastern India including North Bihar under the colonial rule. Choudhury tends to argue that with commercialisation of agriculture in Eastern India during the British period the casual labour was increasingly replaced by the bonded labour as dominant form of labour. The linear nature of Chaudhary's argument, however understresses the complexities of labour relations and its changes in the rural society under the colonial rules which we tried to stress.

The nineteenth century and early twentieth century labour relations in North Bihar had some specific features of their own. It was common, for example, to find kamias (basically bonded ploughmen) working as reapers alongside majturs (casual labour). A lohar (blacksmith) repaired plough for his jajman for traditionally determined crop payments. The jajman, on the other hand, would want the lohar to perform his services for lesser payments. Under this condition of surplus labour, these artisans, such as lohars, chamar, had to work as agricultural labour to supplement their artisanal income. In some cases, as in case of jolahas (weaver), the dispossessed artisans became part of the agricultural labour force while continuing to operate their dilapidated looms as off-season, part time work, supplying the needs of the village folk.

The demand for labour in agriculture depends on the cropping pattern which is a reflection of soil condition, land use, production technique etc (Bharadwaj, 1974 : 18 and 84). In North Bihar all these were critically dependent on the monsoon, which determined not only the agricultural operation but also the whole system of work and cycles of life in rural society.

This dependence of agricultural operation and through that the demand for labour on rainfall is the specific feature of pre-capitalist agriculture of North Bihar or, for that matter, of any agriculture in any such rural society.

Marx provides a conceptual framework for the analysis of this sway of nature in agriculture in such ^a society. In industry, Marx argues, the production time coincides with labour time. But in agriculture the production time is greater than labour time

1. Patel (1952); Kumar (1965); Choudhury (1975); Choudhury (1977); Amin (1984); Bhattacharya (1985); Breman (1979); Ghosh and Dutta (1977).

(Marx, 1973). In agriculture the production time has two periods : (1) period in which the capital exists in the labour process and (2) period in which its form of existence - unfinished product -is handed over to the sway of nature (Marx, 1973 : 317). In this second period, in agriculture the capital is tied to the production without adding anything to the total product as no labour power is expended during this period. In the cultivation of rice, for example, it happens in the period between transplanting of the crop and its harvesting.

In pre-capitalist agriculture this has certain important implications.² First, the relative rate of return becomes less in agriculture which makes agriculture unattractive to capital in the stage of its initial accumulation. Second, the cultivators need money during this working period of production time. The less resourceful or the less fortunate have to take loan during this period (Amin, 1984). Third, the labourers remain without work or work less during this period. This situation often induces them to accept the life of bondage of one type or the other in preference to the life of free labour as that enables them to survive during these lean, workless months. The whole rural society spends its days during this period praying for rain at appropriate time in appropriate measure.

In Table 5.1 we have given this relationship between monthwise rainfall, agricultural operation and labour demand in a somewhat crude form. The demand for labour is presented in the form of average day hours of work in a particular season.

North Bihar, as indeed the whole of Bihar province, has three main agricultural seasons: Bhadoi, Aghani and Rabi.³ The agricultural operation begin in Jeth, i.e. in the Rohini asterism.⁴ If it rains in Baisakh, it is a good presage. It means the beginning of the preparation of paddy field.

Jeth (May-June) and Akharh (June-July) are months of hectic activities in the villages. Lohar repairs the plough, and also sells a new one. Chamar repairs leather

2. Marx's analysis is based on capitalist society. But his concept is equally applicable for pre-capitalist societies.

3. Bhadoi and Aghani draw their names from their reaping months. Rabi is a persian name, meaning spring. See C.J. Sterenson Moore, Final Report on the Survey and Settlement Operation in Muzaffarpur District, 1892-1899, (1961).

4. In Bihar, the cultivators follow lunar asterism for agricultural operation. It consists of 27 nachatras or lunar asterism, i.e. 2 1/4 asterism in each month. The asterism are not of equal length. The Hatiya is largest with 16 lunar days; and the others range from 13 lunar days in dry months to 15 in the wet months. See Grierson(1975: 274-275).

Table 5.1

Lunar asterism	English Month	Crop Period				Average rainfall	Average Day hours of work
		Autumn	Summer	Winter	Spring		
Aswini	April	P	-	-	H	2	72
Bharni	May	S	-	-	P	4	4-8
Krittika	"						
Rohini	June	T	S	P	-	6	12-13
Mirgsira	"						
Aradra	July	W	W	S	-	10	8-10
Punarbas	"	-	-	-			
Pukh	"	-	-	-			
Asres	August	W	H	T	-	>10	4
Haggha	"						
Purba Phaguni	"						
Utra Phaguni	September	H	-	W	P	8	4
Hathiya	"						
Chitra	October	-	-	H	P	<4	10
Swati	"						
Bisakha	November	-	-	H	S	<2	2 or less
Anuradha	"	-	-	-			
Jestha	"	-	-	-			
Mul	December	-	-	H	W	1	2-4
Purba Kharb	"						
Utra Kharb	January	-	-	-	W	<2	2-4
Sawan	"						
Dhanishtha	February	-	-	-	-	-	-
Satbhikha	"						
Purab Bhdrapad	March	-	-	-	H	-	4-5
Uttar Bhdrapad	"						
Reoti	"	-	-	-			

Note : 1. P = Ploughing; S = Sowing; T = Transplanting;
W = Weeding; H = Harvesting.

2. Lunar asterism does not exactly tally with their corresponding English months because of difficulty of presentation.

Sources : Prepared from (1) Geddes (1982 : 175-176); (2) Survey and Settlement Report of Muzaffarpur; (3) Grierson (1885).

straps of the yokes. Barhi does woodworks of the plough. Kamias bond is renewed. In the field the ploughing for Bhadoi rice, kodo makai and pluses begins. The field preparation for Aghani rice and other Aghani crops also begins during this period. In short, the jobs are there for everybody during these months of June-July. The whole village is active (Bhattacharya, 1985). Patwari keeps village account; Gorait watches crop; Barahil collects rent.

From Bhado (August-September), a relative calm sets in. It continues through Asin (September-October) to the beginning of Kartik (October-November). During these period in some areas Bhadoi crop is cut. But the Aghani is maturing in the field. Only activity is in the sugarcane field where the labourers are in demand to tend the maturing crop. In some areas the job of preparing rabi fields also begins.

On the whole, this is a slack season. The cultivators and the labouring classes wait and pray for rain. In Sawan (July-August) rain is needed. But in Bhado (August-September) it must rain. For crops like rice, pluses and standing sugarcane, the Hathiya rain in Asin (September-October) is highly beneficial. Proverb says: Hathiya barse tin hot ba, sakkar sali mas. Hathiya barse tin jat ba, til kodo, kapas (Rain in Hathiya produces three things - sugarcane, rice and pulse; and destroy three things — seasm, Kodo, and Cotton) (Grierson, 1885 : 283).

In Aghan (November-December) also the rain is needed. It is good for Rabi crop and therefore, it means work till Pus (December-January). In some area, the work goes on upto even Chait (February-March). In Aghan (November-December) and in Pus (December-January) the activity returns to the village. The Aghani rice, the major crop, is cut between September and December and heaped in the field during this period. Barhis, lohars, chamars, hajjams, dhobi, bhats, all get their rasum (share) for the work done earlier; and the labourers get their wages. Village officials also come to take their share and their cess (abwab). After that the crop is brought to the khalians for threshing. At this stage the patwari (accountant), the gorait (watchman), the barahil (peon), and kumhar (potter) etc. are all paid their due. The festival season begins now. From sukhrati (Devali) till deb uthan, the village priests too have their hands full and get their shares in the surplus in the form of gifts.

In different season one finds all functionaries doing their socially assigned work: village officials, artisans, cultivating labourers, the Kamias and the maidurs or casual

labourers have their specifically assigned jobs at specific time of the year and the work of one depends on the work of others. But, above all, the timing of the work and also the availability of jobs is ultimately dependent on nature. If the rain fails, the ploughmen could not get employment even if the artisans have done their repair work properly.

In this chapter we will take up the village officials for a detailed study. The village officials create conditions of existence. Two types of village officials can be identified in any village of North Bihar: (1) Those who work in the zamindari establishment and get paid directly by it. Gomostah, Amin (clerk), Salis (mediator), Juribkas (measurer) etc. falls into this category and (2) Those who work for the village and get paid from the village surpluses. These differences are, however, only notional as all the officials are ultimately paid from the village surpluses. Some functionaries like Gomasta get salary from the Zamindari establishments and perquisites another expression for forced extra collection from village tenants.

Further they were under the effective control of the zamindars in the final analysis. Effort were made to bring the Patwaris, of the village accountant, under the Government control under the Regulation XII of 1877. But they remained virtually the zamindars men. Notes written by the district officials of Tirhut, Purnea, Monghyr and Champaran repeatedly expressed their frustration over their inability to make Patwari listen to their bidding.

The allowances of these officials were paid at certain rates determined by customs. These rates are available in Buchanan's Accounts, Hunter's Statistical Accounts, Settlement Reports and the district Gazatteers. These rates are strictly speaking rates of allowance of village officials of different individual estates. The district rates are not available. Further, these information are not collected from specific regions and consistently over long time which, therefore, prevents any time series analysis of these data.

From the ensemble of this scattered information, one can make the following observations: the village officials income come from three different sources : (1) Cash : it is usually paid by Zamindars on monthly or annual basis. (2) crop or grain (after threshing) : it is usually some percentage share of the crop harvested and threshed. (3) Land : it is usually rent free and often given along with some rented land. (4) Perquisites : it includes abwabs and pilferage.

Cash payments are usually on a monthly basis. But sometimes and in some area it is paid annually also. For example in the 1870 in the Patna districts, Gomashtas and Patwaris were being paid annually (Martin, 1838, II : 234).

The rates of cash wages were different in different areas. In Pargana Bhagalpur the rates of cash wages was 1/4 to 1/2 anas per rupees of money rent collected by Patwari (Martin, 1838, II : 234), in some other areas of Bhagalpur it is 1 and 1/2 anas per year from every house; in Shahabad it is 3 pice ⁵ to 1 anna per rupees of rent collected from ryots; in Saran Rs.4 to Rs.2 per village according to size and importance of the village. In 1910 in Narhan estate in the Monghyr district, the Patwari's wage rates were found to be 1 pice per rupees rent collected from the tenant along with Rs.12 to Rs.2 in cash per month; in Charaparan they were paid Rs.48 to Rs.24 per month.⁵ Thus primarily the Patwaris total cash income depended on his rent collection: the more rent he collects the more income he has. Besides this, in most cases he has some fixed salary from his landlord.

The kind part of the allowances is usually some specified portion of the undivided crop; the smaller officials getting less than the bigger ones. Buchanan found that in Pargana Bhagalpur Patwaris kind allowance was 2 and 1/2 sers of each bigha of land rented by tenant along with 3 sers of grain per maund of grain collected by landlord. The Gorait got less, only 2 chattaks per maund of rented land ⁷. O'Mally^e also reported that in Patna district this allowances was expressed as some chattaks per maund of grain. In Patna Gorait got 6 chattaks of grain per maund; in Gaya 2 chattaks per maund of undevied grain; in Shahabad 2 Kachcha paseri per 100 maunds (approximately 1/2 percent the total). For barahil the rates in Patna was 10 Chattaks grain per maund; in Gay 2 chattaks per maund (Martin, 1838, II : 234) For Sonar the rates are different : it is 1 to 1/4 ser per every rupees of grain sold and it was paid by the purchaser.⁸ In short, it is clearly evident that (1) the rates vary from area to area; (2) the higher officials have higher rates and (3) the burden is mostly borne by the tenants.

5. Four pices makes one ana.

6. Reports on the Survey and Settlement, respective districts

7. O'Mally, Bihar District Gazetteers, various districts. Chattak is a local weight, weighing 1/16 of a ser, which is 1/40th of a maund.

8. O'Mally, Bihar District Gazetteers, various districts,

Village officials were also given land. It was usually rent free when it was part of their job condition. The size of the land and the conditions of possession of land varied from area to area. In Patna Gorait was given 1/2 acre rent free land and Chaukidar almost 1 bigha (0.6 acre) or less (Martin, 1838, I : 315). In Bhagalpur (Hunter, 1877, XI : 96 and 97), the Pauniya (Chamar_drum beater) was also given rent free land. Usually the land was given to the lower functionaries and its size varied from a tiny plots of 0.4 acre (Hunter, 1877, XIV : 108) to as large as 8 acre (Martin, 1838, I : 319).

Besides this rent free land, the village functionaries were often allowed rented land. The size of the rented land and rent again were highly variable. The usual measurement was as much as the plough can cultivate. But it could be anything. Buchanan, for example, found that in some Zamindari establishment in Behar, (in Patna district) the Peyadahs (guards) were given as much rented land as he can cultivate. In the district of Behar, again, where the rent free land was large, no rented land was given (Martin, 1838, II : 231).

Payment to village officials were made from undivided crops. This was the general norm. The actual procedure of assessment of their share and their forms of and time of payment was different for different forms of tenancies. In palaidari (Martin, 1838, I : 374) the village officials were paid (after the artisans) from the undivided grains before its division between tenants. In danabandi the allowance of village officials were estimated and the tenant was given 5 to 10 percent of the estimated crops before and for subsequent payment to the village officials. This was the norm. But in actual practice there were exceptions. Buchanan found in Pargana Bhagalpur that the Patwari got paid mainly by the tenants (Grierson, 1893 : 74-75). The landlords paid nothing.

There are, however, certain types of payments which were customarily paid by the tenants only. For example in the Patna district amin (Chief Surveyor) salis (arbitrator), and jaribkash (chainman) etc., all servants of Zamindars, were paid by the village tenants (Martin, 1838, II : 234 and 235). In Monghyr district, it had been recorded that both landlords and tenants paid small amount to the amins (chief surveyor) for his job. Salis (arbitrator) got grain from both landlord and tenant. Bathwara gets pittance from the tenants only (Hunter, 1876, XI : 97).

Perquisites is another source of income of the village officials. It is, however, an euphemism for abawabs literally meaning illegal cess. The law defines 'abwab' as tax

items of pre British days which have either been abolished or consolidated with the land revenue by the British State (Hunter, 1876, XV : 79). But these perquisites mentioned here included taxes which were declared illegal, but were continued to be collected by the zamindars. To the colonial administration these perquisites were illegal imposition by Zamindars (Wilson, 1855 : 2-3). But the ryots paid them. The ryots did not oppose because it (abwab) had the sanction of custom. In many instances the British officials have described these as customary cesses.⁹

Patwaris and Gomastas were the main appropriator of abwabs. Gomastas took perquisites in Bhagalpur, Purnea, Tirhut and Patna district and mangam in Monghyr district.¹⁰ The other categories of village officials who took abwab in considerable measure were gorait (watchman) kotwal or chowkidar, barahil (baillif), and weighman (Hunter, 1877, XV : 121-127) (termed variously in various districts).

The abwabs are usually related to crops or grain (i.e. after harvest); it is usually some specific portion of the crop or grain. Mangam is, however, collected in Patna district at the rate of 9 and 1/2 ser per bigha of land in Patna district and at the rate of 12 and 1/2 ser per plough in Gaya and Monghyr district. Also, the gorait of South Monghyr district got his jagirdar in the form of rent free land. This linking of abwabs to crops make it flexible and elastic to crop production.

Travelling through Patna district in the early nineteenth century, Buchanan found that Gomastas and Patwaris lived in considerable affluence, much above their incomes as calculated by him. He found that illegal exactions were their main source of opulence (Martin, 1838 : I, 234). In his statistical accounts of Patna district Hunter said that the village Gomastas and Patwaris cheated the maliks (Zamindars) by manipulating their accounts, and the ryots by imposition. Often they have been described as litigants, quarrelsome and provocateur of petty cases among the ryots for wrenching out extra farthings of commission from the ryots (Hunter, 1827, XI : 96).

The lesser functionaries such choukidars, gorait and barahils also took on these attitudes of Gomastas and Patwari. The ryots paid them in order to keep them away from making mischief. But the later wanted more. Chowkidars were most notorious of the

9. See, for example, J.A. Hubbak, Final Report on the Survey and Settlement Operations in the district of Shahabad (1919).

10. Hunter also provides various detailed accounts of abwabs in various issues of his statistical accounts.

village officials. Their depredations made life and property of the cultivating classes insecured (Grierson, 1890 : 282)

In summary the village officials can then be functionally divided into a) officials of Zamindar's establishment and b) officials of village. But in reality all of them acted as Zamindar's men and shared in the surplus extracted from the peasants. Second, the village officials' incomes came from (i) legal payments, cash or kinds; (ii) land assigned to them (iii) customary deductions, and (iv) abwabs. Third, while subservient to the Zamindars as employees, village officials often adopted illegal means to amass wealth from the estate of the masters, and extracted illegal rasums and abwabs.

Chapter VI

ARTISANS

In North Bihar, rural artisans maintain conditions for agricultural production. The barhi (Carpenter) makes the plough; the lohar (blacksmith) repairs ploughs and makes other tools and implements such as hansua (sickle), kodari (spade) etc. Besides helping agricultural production in these ways, many of these artisans were engaged in agricultural labour.

The artisan's current condition in North Bihar is at least partly the product of the de-industrialisation during the British rule. There were many scholars including Thorner who pointed out de-industrialisation as a consequence of the colonial trade regime.¹ Bagchi specifically discussed the situation in gangetic Bihar and gave this aspects of colonialism a rigorous theoretical formulation (Bagchi, 1976 b). Basing his argument on the occupational data from Buchanan's diary and the 1901 census on the North Bihar plains, Bagchi has shown (a) that there was a fall in the proportion of population employed in industry,² and (b) that de-industrialisation affected first the traditional industries oriented towards exports and in export zones and later its impact was felt in segments of industries geared to internal production.³

This process of de-industrialisation had quite a few implications for the vast rural artisans of North Bihar : not only did they loose their traditional occupations but in cases in which they maintained their traditional occupations they were continually subjected to the threat of loss of employment and income in bouts of market fluctuations. Many of them became simply agricultural labour dependent on land since alternative employment oportunitics did not develop in the region. Many of them migrated to the factories and mines in and around Calcutta, Eastern Bengal and Southern Bihar. But employment in this region did not expand fast enough to absorbe these displaced workers.

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1. Thorner's study was confined to 1881 to 1931. See Thorner "De-industrialisation' in India, 1881-1931", in Thorner and Thorner (1962).
 2. See also, Chattapadhyay (1975) Krishnamurthy (1976)
 3. For theoretical formulation of the concept of de-industrialisation, see Bagchi (1976 a); also see in this connection Krishnamurthy (1976); Viczany (1979) Bagchi (1979); Krishnamurthy revised his view about Bagchi's formulation in "De-industrialisation in Gangetic Bihar: A case study of the Cotton Textile Industry, 1809-1898 (cyclostyled).

Table 6.1

Occupation Pattern of Artisan Castes (Males) : 1901 to 1931
(Per cent)

	1901				1911				1921				1931			
	Caste Profe- ssion	Culti- vators	Labour	Others	Caste Profe- ssion	Culti- vators	Labour	Others	Caste Profe- ssion	Culti- vators	Labour	Others	Caste Profe- ssion	Culti- vators	Labour	Others
1. Barhi	32.5	54.7	5.5	39.8	36.8	45.5	10.3	7.4	33.0	50.5	12.3	4.3	30.8	47.4	11.3	10.5
2. Chamar	5.7	65.0	17.0	18.0	11.8	33.7	46.8	7.7	9.4	38.5	48.2	3.9	9.4	33.7	43.7	13.2
3. Dhoba	46.0	41.7	56.0	7.3	48.0	37.0	11.0	4.0	41.4	45.5	11.4	1.2	42.0	40.2	13.11	4.6
4. Dom	22.2	40.5	24.1	35.5	79.4	7.7	7.9	5.1	-	-	-	-	-	-	-	-
5. Hajjam	40.8	46.3	48.6	5.1	7.0	42.9	9.0	41.2	41.7	47.9	8.7	108	41.2	44.4	9.4	5.0
6. Johaha	27.9	50.3	11.8	37.9	18.5	45.1	22.8	13.6	15.0	52.9	23.8	8.3	16.6	49.3	17.0	17.1
7. Kahar	23.8	53.8	31.2	15.0	22.8	31.6	35.0	10.6	-	-	-	-	-	-	-	-
8. Kumhar	39.9	42.9	40.7	16.4	52.4	35.8	7.5	4.2	45.3	44.9	7.9	2.0	40.1	46.3	9.3	4.3
9. Lohar	26.1	53.7	7.0	39.4	23.9	52.7	9.0	14.3	-	-	-	-	-	-	-	-
10. Nunia	5.9	69.7	14.6	15.8	20.5	48.8	21.9	1.1	14.2	61.3	17.3	7.3	-	-	-	-
11. Sonar	42.6	34.2	3.4	62.4	38.0	27.6	6.1	28.3	-	-	-	-	-	-	-	-
12. Tanti/ Tantwa	13.4	55.2	13.5	31.3	6.5	33.7	48.2	11.6	12.7	39.5	42.2	5.5	6.0	36.6	39.4	17.9
13. Teli	30.3	53.6	5.8	40.7	22.5	50.7	9.9	16.9	19.6	56.9	9.3	14.2	20.6	54.8	10.0	14.7

Note

: 'Others' include all profession in the census other than cultivators and labourers. Labourers includes domestic and unspecified labour also.

Sources

: Census 1901, Vol 64, Table XVI, Part A and B; Census, 1911, Vol V, Table XVI; Census 1921, Vol VII, Table XXI, Part A; Census 1931, Vol VII, Table XI.

6.1 Occupation pattern and reduction of all artisanal labour to general labour

Table 6.1 gives the occupation pattern of the village artisans : these are taken from the census tables and based on caste occupations of the artisans and covers the period between 1901 to 1931. In census person's occupation is defined by the main sources of his or hers income. A person is enumerated as agricultural labour if he earns his income primarily by working in others field. According to us, however, 'labour' is a relation. Labour has nothing but his labour-power to sell to the capitalist to earn his or hers living. This labour can be found only in a capitalist system of production. In a transitional agricultural society this 'labour' can be found in various stages of differentiation, possessing various instruments of agricultural production from land to artisanal tools. The artisans here (Table 6.1) are not "labour" in this sense. The classical concept of labour is not applicable in this situation (Patnaik, 1976). Despite such conceptual problems, certain trends are clearly discernable in Table 6.1. The table does not give any information on female labour because of the unreliability of female data in the census. The item 'cultivation' in Table 6.1 includes cultivation of all sizes, big and small, and also tenants of all sorts, including under-tenants. The functional castes in Bihar has a tendency to report their caste occupation as their main occupation.⁴ And where they report agriculture as their main occupation they usually note their traditional occupation as their subsidiary occupation. Even then these data probably underestimates the number of those who are solely dependent on agriculture.

Despite these limitations certain broad conclusions can be derived from the Table 6.1. First, cultivation has emerged as one of the principal occupations of all castes in the early decades of the twentieth century in North Bihar. The only exception was the Dom (7.7 per cent) in 1911 with sharp corresponding rise in their caste occupation from 41 percent in 1901 to 79 per cent in 1911. It is probable that some proportion of this rise is due to census enumeration procedure rather than any change in real occupation pattern.

Second, one important occupations of these artisan castes is unspecified 'labour' which in our case includes all labour, including casual workers in urban areas.

4. See discussions in Census, 1911, vol.V, p.485; Census, 1921, vol.VII, p.235; and Census, 1931, vol. VII, p.121.

Table 6.3

Artisans of three villages of Tajpur Sub-Division Darbhanga District C. 1890

Caste	No. of families	Family Members engaged in		Land (acre) per family	Rent (Rs.)		Livestock (No.)
		Caste pro-ssion (No.)	Labour (No.)		Per Family	Per Acre	
Village A							
Dhoba		2	—	1.5	8.2	5.5	2.5
Nunia		3	5	1.7	4.1	2.4	0.3
Tanti		—	9	1.5	6.8	4.6	0.8
Kandu		—	—	0.6	2.0	3.3	—
Hajjan		2	2	0.9	4.3	4.9	—
Barhi		1	—	3.85	16.1	4.2	1
Chamar		1	—	0.9	4.3	4.9	—
Village B							
Barhi		2	—	3.7	2.5	16.1	4.5
Hajjam		1	—	2.9	2.0	9.0	3.1
Nunia		2	—	0.9	—	9.0	11.5
Tanti		1	6	1.4	1.3	6.9	5.1
Chamar		2	7	1.1	0.3	4.0	3.7
Village C							
Tanti		2	7	4.7	1.5	15.8	3.3
Chamar		1	5	0.6	0.3	1.8	3.0

Notes : 1) No Mohammedan caste has been taken as no break-up of them has been given in the report.

2) Hardly any landless artisans exists in the village. The land is mostly cultivated as land Bhaoli.

3) 'Land' includes 'Pahi' and 'bhaoli'. 'Pahi' land refers to land outside the village.

Source : Harrison, (1890).

In 1901 for such service castes as Dhoba (56 per cent), Hajjam (49 per cent), Kumhar (41 per cent) "labour" is the most important occupation. These castes are followed by Dom, Chamar, Tanti, and Nunia, and Kahar. In 1911, 1921 and 1931, Chamar, Jolaha, Tanti, and Nunia became more important labouring classes (Table 6.1).

Third, the caste profession continued to be reported as main occupation for a fair proportion of these castes. For Dhoba, Barhi, Hajjam (except in 1911) the caste profession constitutes 30 per cent or more throughout the four decades. In case of Dom, Jolaha, Tanti, Lohar and, particularly, Nunia and Chamar the caste occupation was reported to be 29 per cent or less from 1901 to 1931.

Thus : (1) the artisans have taken to cultivation and labour in large number between 1901 to 1931; (2) the caste like Dhoba, Hajjam, Barhi, Sonar and Teli, mostly service castes, continued their caste occupation in fair proportion possibly along with occupations related to the agriculture; (3) Chamar, Dom, Nunia, Jolaha, Tanti, Lohar have mostly abandoned their caste profession in favour of cultivation and labour.

6.2 Conditions of Artisans

In order to enquire into the conditions of these artisans in North Bihar, we have presented here some case studies. These case studies have mostly been taken from official and individual reports enquiring into the conditions of these artisans in the wake of a famine or natural calamities. Often the expressed or implied purpose of these studies had been to prove that the conditions of these artisans had not been as bad as they thought out to be. In spite of these biases, they provided useful information about these artisanal classes for our interpretations which general studies could not.

In the 1890s, Harrison made one such enquiry in the three villages of Darbhanga district (Harrison, 1890 : 274-305). The village had 190 families, about 29 percent of which were artisan castes. Their economic condition is given in Table 6.2. From this

Table 6.2

Economic Condition of Artisans of Three Tajpur Villages C. 1890

(Figures indicates nos. of Families)

	Dhoba	Nunia	Tanti	Kandu	Hajjam	Carpenter	Chamar	Lohar
Poor(in debt)	1	2	12	1	2	3	3	3
In difficulty in bad years	2	6	-	1	1	3	1	-
Comfortable	-	4	1	-	-	-	-	1
Total	3	12	13	2	3	6	4	4

Source : Harrison (1890)

data we find that except one Tanti family and two Nunia families, all other artisan families were either poor and indebted or in difficulties in bad years. These Tanti and Nunia families were comfortable because they were respectively substantial tenants and owners of domestic refineries (Harrison, 1890 : 304 and 293).

Table 6.3 gives data on land holdings etc and the occupation pattern of these artisan families. Their asset structure shows the following pattern: (1) No artisan family is landless. But their average family holding is between 1.5 and half acre and they are holding land mostly under bhaoli i.e. crop sharing system of tenancy. Only the carpenters in village A, the Barhis and Hajjams in village B and on 2 Tantis in village C have more than the average size of land (2) The average number of livestock of the artisan families in village A is low, except in case of the Dhobas (2.5 numbers per family). In other villages their livestock endowment is good (Table 6.3).

Their occupation pattern in Table 6.3 is as follows: (1) Nunia (Village A), Hajjam (Village A) Chamar and Tanti (Village B and C) combine agricultural labour with petty tenant cultivation (bholi) and caste profession. (2) Dhoba (Village A), Barhi (Carpenter) and Chamar (Village A), Nunia (Village B) Barhi, Hajjam and Nunia (all Village B) does only their caste job. (3) one Kandu family in Village A does cultivation only.

Generally speaking, these artisans in these three villages combine all these professions in one form or the other : (a) tenant cultivation (usually inferior or waste land); (b) agricultural labour; and also (c) their traditional craft product (Harrison, 1890). The demand for their services and their cheap, homemade product was ensured by daily necessities of the poor villagers and their social functions.

In another study of the village Paharpur, District Bhagalpur in 1888, it was found that the artisan families constitute 24 percent of total families and 21 percent of the total population in the village ⁵. Table 6.4 gives the land holding, occupation pattern, assets and indebtedness of these artisans. It shows, first, that almost all artisans have land, except for those belonging to khatwe (weaver), gareri (shepherd) and mallah caste. Secondly, all artisan castes still performed their caste work together with cultivation and general work. Barhis, chamars and telis families were engaged mostly in cultivation.

5. Letter dated 24 April, 1888, From B.B. Narayan, assistant settlement officer, Raj Banaili and Srinagar Estate to the Collector of Bhagalpur, in P. Nolan's, Enquiry into the condition of the poorer classes, Revenue Department 30 June, 1888.

Table 6.4
Land and Other Assets of the Artisan Labourers of Village Paharpur Pargana Kubbhand
District Bhagalpur : 1888
(Average Per Family)

Caste	Land Holding		Utensils, Brass etc		Animals		Agricultural Implements					Debt		Remarks			
	Number Family (No)	Withen Village (Bigha)	Outside Village (Bigha)	Tahil (No)	Jola (No)	Bati (No)	Cow (No)	Bullock (No)	Buffelows (No)	Goat (No)	Plough (No)	Spade (No)	Khurpi (No)		Hansua (No)	Money (Rs.)	Grain (Mds.)
1. Shelkh	5	1.9	-	1.2	1.4	.2	1.2	.4	-	-	-	.8	1	1	3.2	2	1. Work in Survey Dept. 2. Barahil (Watchman)
2. Kunjra	9	1.5	1.0	.6	.6	.1	.2	.1	-	.3	-	.6	.2	.3	.6	.7	1. Work as Cool outside village
3. Goala	12	1.79	.42	.6	.6	.08	.3	.25	-	.2	-	.5	.75	1	.8	.2	
4. Khatwa	2	.68	-	1	.5	-	-	-	-	-	-	-	.5	1	2.5	2	One family has taken to be paid by work
5. Halwal	1	2.5	-	1	2	-	-	-	-	-	-	-	1	1	8	-	
6. Garenl	1	.65	-	.6	.6	.08	.3	.25	-	-	-	-	1	1	10	-	

Sources : Letter dated 24 April, 1888, from Baboo Burhandeo Narayan, Assistant Settlement Officer, Raj Banaili and Srinagar Estate to Collector of Bhagalpur, in P. Nolans Enquiry into Conditions of Poorer Classes, letter dated 30 June, 1888, Revenue Department, Darjeeling.

One gareri family had been reduced to performing agricultural labour alone. Third, their asset holdings were insignificant. They owned implements like plough, spade, khurpi, ansua etc. None of them owned any ploughs. No information was there in the report about their artisanal implements. Fourth, Indebtedness was fairly widespread among the artisans.

In Table 6.5 we tabulated the sources of income and wages of these artisans. For the castes like Barhi and Hajjam, the village of Paharpur and the neighbouring villages of Asai and Chhatwan provided adequate demand for their services. For the telis, or oilmen, the caste profession was shrinking. They had taken to other profession like shopkeepers, grain dealers and petty money lending. One Chamar family lived through a) selling hides and shoes and (c) singing in social function (Table 6.5). Chamarin added to the family income as village midwife. Worst were the weavers, the Khatwes and their brethren, the Gareres, the blanket wearers. On their own the weavers of Paharpur did not weave any more. Says the Assistant Settlement Officers note.⁶ "They were given thread to weave it into cloth, for which they were given remuneration at a contractual rate. The remuneration for cloth of a particular kind and breadth was one pice per yard. One man could weave from three to seven yards of such cloth in a day. They got the work during the four months of the cold weather". Obviously Khatwes of Paharpur mixed cultivation and agricultural labour with their caste job. In spite of this their survival was precarious. The family of Bhorosi Khatwe is a typical example :

"The family lives partly on roots. They eat leaves of plants and drink water in lotas borrowed from relatives living in the same house."

In Paharpur, therefore, except Mallah, Khatwe and Gareri, all the artisan castes, combined their caste occupation with other work like cultivation, labour etc. The demand for product artisanal product come from (a) the agricultural production within the village or its neighbourhood; (b) needs of basic services and necessities of life in the society, like shaving or midwifing, (c) social functions. The weaving castes were badly affected. They had mostly become agricultural labour. Some tried to combine labour with cultivation of tenanted land. They also weave mottiya in their dilapidated looms for the village poor.

6. Letter dated, 24 April 1888, from B. Narayan, Assistant Settlement Officer, Raj Banaili and Srinagar Estate to the Collector of Bhagalpur in P. Nolan, Enquiry into the conditions of the poorer classes, 1888.

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6. Letter dated, 24 April 1888, from B. Narayan, Assistant Settlement Officer, Raj Banaili and Srinagar Estate to the Collector of Bhagalpur in P. Nolan, Enquiry into the conditions of the poorer classes, 1888.

Table 6.5

Rates and Sources of Income of Artisans of Paharpur

Artisans	Source of Income and Rates
1. Barhi	"Pal" (allowance) : 1 1/4 <u>maunds</u> grain per plough
2. Chamar	1. Skin of carcasses
	2. Shoe selling : 6 annas a pair (Makes 1 pair in 3 days)
	3. Musician : 1.6 annas per day.
	4. Wife : Midwifing :: 4 annas male child; 2 annas female.
3. Hajjam	1. Pal : 10 Kachoha ser per family
4. Khatwe	1 Pice per yard woven (one man can woven 3 to 7 yards per day).
5. Gareri	2 annas per day.
	(One blanket of 3 kachcha sers in 3 days. Cost of work : 12 annas; blanket sold : Rs.1-2)

Note : 1 pice = 1/12th of an ans.

Source : Report of Baboo B. Narayan, Assistant Settlement Officer, Raj Banaili and Srinagar Estate, To Collector of Bhagalpur; letter dated 24th April, 1888, in P. Nalan, Enquiry into the condition of the poorer classes; 1888.

In the villages of Raghunathpur and Sitapur in Pargana Duphar in Bhagalpur ⁷ district it was found that 17 and 14 percent respectively of the populations were artisans. In Raghunathpur the artisans had no land; they were normally tenants. In Sitapur, they worked also as agricultural labourers. In Raghunathpur the weavers, weaving in the agricultural off-season, did not weave their loom on their own accounts. They weaved the cotton supplied to them by others and got usual market daily wage in return.⁸ Gareris (shepherds) made coarse blankets and sold them.⁹ These artisans were often tenants and agricultural labourers. They did their caste job to serve the village needs. The weavers and shephards in this area had the relative advantage of a local markets. They numbered six or seven families out of a total population of two thousand. But, as noted above, the weavers weaved under some kind of 'putting out system'.

In the eighteen Bhagalpur villages studied in the year 1888, it was found that the artisans castes constituted 14 percent of the prosperous villages, 6 percent of

7. Letter dated 13 April, 1888; in P. Nolan's Enquiry into the condition of the poorer classes, 30 June, 1888.

8. Letter dated 13 April, 1888, p.2.

9. Letter dated 13 April, 1888; p.2.

average villages and 15 percent of deficient villages.¹⁰ The artisans usually live in the bigger villages and serve the neighbouring areas.

The Report said the artisans were paid in grains. Ordinary carpenter, for example, got 3 to 4 annas a day and 2 cooked meals; potter got half of it. The weavers got only one meal. Some of these artisans, especially weavers, worked as agricultural labourers. The weavers suffered badly due to decline of tusser industry. The number of their looms dropped to almost half and about half of the weavers in these villages joined the ranks of agricultural labour.

At about the same time, the collector of Purnea¹¹ reported that the class of urban artisans in Purnea was very small. Coming to village artisans the collector reported that a barhi (carpenter) usually received an allowance of 15 to 20 sers per plough at each harvest (usually two in this region); he also earned some income by selling ploughs, boats, etc. A napit (barbar) received 10 sers of grains at each harvest, besides presents on social occasions and other customary allowances. A dhoba (washerman) got 5 to 10 sers from each household, according its size, at each harvest. A chamar got skin of the carcasses and sold them after cobbling. Chamarin, his wife, added to the family income by way of presents from mid-wifing. The artisans of Kajah Musahari village in Purnea District, the report said, had abandoned their caste profession. Mostly Lohar (carpenter) and Muchis (cobler), they become (a) agricultural labour; (b) ploughman and/or attached labourer; (c) petty tenants or (d) petty officials like Duffadar in government departments.

The Collector of Monghyr,¹² after studying ten villages in five thanas of Monghyr in 1888, observed that the artisans in all these villages operated ploughs and were paid in kind. Their women worked in the field only during the crop cutting season and earn Rs.2 to Rs.3 worth of grain. There were few weavers in these villages who appeared to be very poor. Their earning through their caste profession being very uncertain, they laboured in the field. In Mohanpur village in the district of Monghyr, the artisan were

10. Letter dated 7th April, 1888, from A.A. Wace, Collector of Bhagalpur to the Commissioner of Bhagalpur division, in P. Nolan, Enquiry into the condition of the poorer classes, 30 June, 1888, Revenue Department, Bihar State Studies, Patna. The Report covers Banka, Mushapura and Sropole subdivisions. It divided the villages into prosperous, average and deficient in terms of their proneness or otherwise to natural calamities.

11. Letter dated 21 April, 1888, from H.G. Cooke, Collector of Purnea to the Commissioner of the Bhagalpur Division, in P. Nolan, Enquiry into the condition of the poorer classes (1888).

12. Letter dated 3 May, 1888, in P. Nolan's Enquiry into the condition of the poorer classes (1888); Revenue department, 30 June, 1888.

paid in kind. When hard pressed their women also worked they usually ate makai and, only occasionally rice. They were usually indebted which was usually contacted for paying rent, and only occasionally, for meeting marriage expenses.

Grierson discussed in detail the Gaya artisans who were still practising their trade. Their demand, Grierson says, is determined by the local markets (Garrison, 1893 : 114). In Gaya districts particularly, the artisans were usually paid in grain. They got occasional cash, usually when they sold their wares to the village market. Their allowance were fixed by customs and tradition. In some cases it differed between Jajman and others, particularly non-cultivators.

The dyers were feeling the European competition. The European dyes, says Grierson, could be bought in 1 pice and people could dye their own cloth at home (Garrison, 1893 : 118 and 119). Only a fraction of these weavers. Jolahas, usually the poorest, operated the loom. The number of looms now, was determined by market demand, not by the number of working hand in the family as earlier. They produced 'motia', a local, cheap, coarse cloth used by the poor. Usually the threads were given to weavers who weave. Rates were usually low, around 4 pies per yard. Only occasionally they got the higher rate of 1.5 sers of grain for every sers of texture woven. Their normal income was 2 annas 6 pies per day (Grierson, 1890 : 114 to 122; 1926).

Table 6.6 gives the total income of artisans in two villages and their relative importance in percentage term. Table 8 shows the following : (1) Total income is Rs.6920 which per family works out to be Rs.72.1 and Rs.14 per head. (2) The percentage of supplementary work is substantial (44 percent of total income). The important sources of supplementary income are a) wages of labour (28 percent); b) services like palki bearer (27 percent); d) cultivation (11 percent). etc.

On the Gaya artisans, Grierson gave us the following information : a) Quite a few artisan castes left their jobs and joined labouring classes. Jolahas, and Rangrez were specially so. b) Artisans such as lohar, barhi, chamar, hajjam, were continuing their caste profession. But they had to supplement their income from a) labour, b) trade, c) services and d) cultivation etc. c) As for their caste profession their demand came from a) agricultural operation; b) domestic necessities and c) social functions. The extent of their demand, and also, therefore, the number of artisan

castes in a particular profession, was determined by the size of the particular villages they resided and its neighbourhood, the size of the local market. d) The surviving Jolahas still engaged in their traditional craft carried on their jobs in the form of some kind of 'putting out' system in :the consumers gave him thread out of which Jolahas weaved the texture at market wage rate.

Table 6.6
Artisans and their Income

	Total (%)	
Income from skilled trades	3862	-
Net profit of cultivation	339	11
Wages of Labour	852	28
Service	828	27
Cattle	60	2
Trade	834	27
Begging	55	2
Miscellaneous	90	3
Total supplementary Income (aunad)	3058	100
Total Income (aunad)	6920	-
Per Family (aunad)	72.1	
Per Head (aunad)	14.0	

Source : G.A. Grierson, (1893:121)

The above observations were based on specific case studies mostly made in the 1880s. But their findings had larger validity in the social realities of Bihar during the entire nineteenth and early twentieth century. Writing around 1800s, Colebrooke said the artisan occupation was determined by the demand for his product in the local market. With this market shrinking, he said, the artisans had to supplement their traditional income by income from other source like agricultural labour (Colebrooke, 1884 : 31). Writing after him, Buchanan said, in Purnea, Bhagalpur and Shahabad, the artificers, the Pauniyas, worked partly in their farm and partly in their artisanal craft for their upkeep. But the more common feature was one brother working in the field and another following his family profession (1838, IV; 283; 1838, II : 218; 1838; II : Appendix, 5 and 45; 1838, I : 300).¹³

13. We have used the volumes reprinted by Comos publishers of Delhi.

One official reports from Sasaram sub-division of Gaya district made almost the same observation about the artisans there: The artisan, the report said, combined their traditional work with cultivation.¹⁴ The official quotes three examples to substantiate his observation¹⁵ Table 6.7).

Table 6.7

Artisans of Village Beerkcup, Pargana Sasaram

Sl. No.	Family No.	Caste	Occupation	Income
1.	1.	Hajjam (Barbar)	1. Land: 7 bighas or 4.3 areas are (Joint Property) 2. Professional fees 3. Presents	24.5 maunds (1/2 share) a) 1.5 bundles from each <u>jajman</u> or, b) 5 sers grain from non cultivators
2.	1.	Chamar (Tanner)	1. Land: 4 bighas or 2.5 acre 2. Sale of leather product 3. Singing in social function.	a) 14 maunds (1/2 share) b) 1 1/2 bundles plough from <u>Jajman</u> N.A. Varying
3.	1.	Dhoba	1. Land: 5 bighas or 3.1 acre 2. Working cloth	14 mounds (1/2 share) a) 1 1/2 ser from <u>jajman</u> b) 5 ser per family from others.

The conditions of other caste families are no better. Sonars, with greater market demand for their products, were somewhat better off. But the Jolahas of the region, knows as Noarhofs, were in a pitiable condition. Kolinhof, weavers making dhuree, earned Rs.7.2 anas per month. The metal workers, locally called Tuterres and Keseres, had mostly become agricultural labourers.

In 1890, Skrine¹⁶ surveyed virtually the whole of North Bihar and concluded that the artisan wages were paid in grain generally. In places where they were paid in cash, they had not risen. The customs and tradition prevented rapid wage rise. The artisans often took up land for cultivation in onerous terms. The indigo, silk, specially tusser,

14. Selections from Divisional and District Annual Administrative Report, 1872-73; p.422.

15. Selection from Divisional and District Annual Administrative Report :1872-73 ;pp.413-414.

16. F. H, Skrine, Memorandum on the Material Condition of the Lower Classes of Bengal,

and the handloom were distressed due to foreign competition.¹⁷ In Bhagalpur tusser industry, number of looms had dropped by 50 percent and the weavers had turned mason. Only in Patna division their condition was somewhat better off possibly due to better local demand. Skrine gives the following information about their income from traditional sources ¹⁸ (Table 6.8).

Table 6.8
Income of the Artisans of Bihar

Sl. No.	District	Artisan Caste	Source of Income	Income
1.	Purnea	1. <u>Lohar/Barhi</u>	Traditional work	15 to 20 sers grain at harvest time
		2. <u>Hajjam/Dhoba</u>	Traditional work	10 sers grain per family
		3. <u>Chamar</u>	Traditional work	
2.	Bhagalpur	Artisan generally	Traditional work	1) 3 anas per day 2) Gifts Total Rs. 6 per month
3.	Monghyr	Artisan generally	Traditional work ; Also land	do

The Moral and Material Progress, reporting at about the same period (1891-92), argued almost in the same vein. The report said that the artisans were attached to the village; they were paid in grain, and their income came from traditional craft, tenanted land, and sundry other jobs including farm labour. The potters suffered from increasing use of metal utensils; telis (oilman) from the use of kerosene; and the weavers from imported English calicoes.¹⁹

In brief, one can summarise the conditions of artisans of North Bihar thus: First, the rural artisanal industries were in crisis, particularly such industries as indigo, saltpetre, textile. This crisis was due to the penetration of market changes in taste, such as increasing use of metal utensils, kerosene etc. Second, despite this, some of the rural artisans, survived. They drew their sustenance from localised demand like (a) the necessity for creation of productive forces (e.g. agricultural tools etc.); (b) the basic necessities like utensils, coarse cloth and (c) social functions and customs (e.g. chamar

17. F. H. Skrine, Memorandum on the Material Condition of the Lower Provinces of Bengal.

18. F. H. Skrine, Memorandum on the Material Condition of the Lower Provinces of Bengal.

19. Moral and Material Progress and Condition of India, 1891-92 (1894).

singing at the marriage etc.). Third, the artisanal castes earned their living through multiple occupations such as (a) their traditional craft; (b) cultivation (usually as insecure tenants) and (c) labour, especially agricultural labour. Some artisans like, weavers, nunias and doms became virtually agricultural labourers.

6.3 Relation between artisans and their employer

During the early British period the discussion on this was initiated by British officials like Metcalf, Maine, Elphinstone, John Shore, Philip Francis et al. While discussing the Indian villages, Marx discussed the Indian village community in connection with his discussion of the Asiatic society (Marx 1969; Bhadra 1983). Marx's observation about the Indian village society grew out of his discussion of the Asiatic Mode of Production. The latter concept was developed by him primarily to point out the origin and the distinguishing feature of the capitalist mode of production, and not to idealise the old concept of the Indian village like the British administrators and their followers.

In later days the view of the British officials were revived in one form or another by the sociologists and other social scientists in this country. In the main, they talked about the harmonious and egalitarian nature of the Indian rural society. Only Ghurye (Ghurye, 1950) and few others talked about underlying tensions and conflicts in the Indian rural society.²⁰ Bhattacharya criticised most of these sociologist and anthropologists as a historical (Bhattacharya : 1985).

The credit for reviving this old official concept goes to Wiser (Wiser : 1936), who conceptualised this artisan - cultivation dependent relationship in the Jajman-Kamin in "The Jajmani system". Jajmans and Kamins are inter-related while serving one another : "Each serves the other. Each in turn is master; each in turn, is servant, each has his own clientele comprising members of different castes which is jajmans or 'birt'. This whole argument is premised on two implicit concepts: a) equal dependence and (b) cohesiveness with equality. Beidelman ²¹ sharply criticised Wiser on the ground that Wiser's own work contradicts Wiser's formulations. Wiser's jajmani system, Beidelman

20. For another view, see Dumont (1972)

21. See, Beidelman T. O. "A comparative analysis of the Jajmani system", monograph, August in Incorporated Publication (No date).

said, is based on 'power' whose determinant is control of land. Further, he added, in the jajmani system the force is veiled in tradition.

Neale used two terms 'resiprocativ' and 'redistributive' to analyse cultivator artisan relation (Neale 1962). Bhattacharya (Bhattacharya; 1985), however, points out that Neale's argument is inconsistent in the later part of his work.

Breman (Breman : 1974) tried to point out the complexities of the Jajmani system in his study of Halipratha in South Gujrat. Breman tried to argue that the relationship between unfree labours and his patron is 'mitigated and complicated by patronage. Bhattacharya have, however, questioned Breman's notion of dichotomy between power and esteem, on the one hand, and income maximisation, on the other. Bhattacharya says that the changes in the relationship of jajman-kamin from increase in the income of the landowning community as envisaged by Breman in his study may not be universally valid (Bhattacharya : 1985 : 16).

Gough provides a more adequate perceptive in understaneding the jajmani system. In the nineteenth century, " the Indian economic relationship becoming part of the world market system, became disembedded from political and legal institutions, just as they did in other capitialist countries (Gough, 1960 : 91). Under the British rule three things happened in India: (a) India was brought under the world market system as a colony (b) New political and legal institutions and private property relations were introduced. (c) But many of the old customary relations persisted. But this customary relation were brought under the "formal subsumption" of the capitalist relation. In such a situation many of the earlier, pre-capitalist relations were maintained formally, but their contents were substantilly modified.

The deeper penetration of the market in North Bihar during the British period was indisputable and we have already talked about it. The import of manufactured goods had thrown vast numbers od artisans out of their jobs. Those among them who were carrying out their caste professions were doing it as secondary pursuits.

The market impact had many other manifesations. The silk and also tusser industry, accordingly to one report, suffered due to market compitation and also taste changes induced by the market.²² The Moral and Material Progress Report pointed out

22. See Memorandum on the Material condition of the Lower Provinces of Bengal, 1892; pp 746 and 54.

that the Kumhar (Potters) of North Bihar suffered due to increasing use of metal utensils though they gained somewhat from the greater use of bricks and tiles in house building. Telis suffered due to ingress of Kerosene.²³

One enquiry²⁴ in eight villages of Sasaman sub-division suggested that one Sonar of the area earned Rs.1 a day which was more than other the earnings of wrlisans because he was the only one Sonar around, which kept up the demand for his product. Their condition, the report said, were no better in other areas. In Banka-Madhepur-Supaul sub-division area of Bhagulpur district Sonar got less than their father as the cultivators had less cash than their fathers. Weavers in the northern part of the Purnea survived as they had there the markets of their products like gunny bags, coarse clothes.²⁵ Sonar of Gaya district survived becuase they supply a bigger market. One could find there one Sonar in a dozen village (Grierson : 1893). Barhi, Lohar, Chamar faced similar situation. They survived because they had their markets within the village.

But even for Lohar, Chamar and Barhi things changed. Their relationship with their cultivators had been inveighed by the market. In Bhagalpur it was reported that there had been effort to reduce the dole to the village carpenters and blacksmiths as the Railways made grain more valuable for the jajmani-cultivators who wanted to sell them to the market.²⁶

Alongside this, however, the exactions, like abwab and forced labour by the zamindar and the big cultivators continued. The State also often forced artisans of the road side villages to work in public works free. Often the weavers of roadside villages were dragged forcibly to work as porters, which often led to mass desertion of artisans.²⁷

In Sasman sub-division the Zamindars extracted chiragi (oil) from Teli, blankets from Dom and shoes from Chamar without payment. Napit was force to attend his landlords unremunerated. Lohar supplied iron work to zamindars unpaid. If he resided

23. Moral and Material Progress and Condition of India.

24. Selections from Divisional and District Annual Administrative Report, 1872-73.

25. Letter dated 7th April, 1888, from A.A. Wace, Collector of Bhagalpore to the Commissioner of the Bhagalpore division; p.2. in P. Nolan Enquiry into the conditions of the poorer classes.

26. Letter dated 7th April, 1888, from A.A. Wace, Collector of Bhagalpur to the Commissioner of Bhagalpore Division. p.3 In P. Nolan's, Enquiry into the conditions of the poorer classes. Also see Memorandum on the Material condition of the Lower Provinces of Bengal (1892)

27. Journal of Bihar Research Society, vol.XXXII, March, 1946, Part I.

on his estate, the village porter supplied pottery at Holi and Dusserah free. If he is non resident, the village amlahs had to be kept content by such free supplies of their products.²⁸ The dhuree weavers paid Mohtarfa to the landlord (Hunter, 1976, XII : 123-124)

In Monghyr district also we found a long list of abwab that the zamindar extracted from their artisans. Basuri, an annual tax, was collected from all artisan caste in Monghyr district. Dhanuk and Kahars provided services to zamindars without payment. Telis and Kahar in all places in the Monghyr district, generally, and, in Jamni sub-division particularly, paid Dolia, Dhunias, Tantis, Tatwas, and Jogis paid Phur. In Begusani sub-division particularly, they paid Tunka instead of Phur. Sonar paid Sonari which was deductions from the purchases of crops which were usually weighed by the same at the rate of quarter of sers of grain in every rupees of grain or other articles weighted by the sonars.

Rahul Sankrityayan described this system of forced appropriation from the artisans in village Ambari in thana Raghunathpur in district Saran thus (Singh, 1939).

"Zamindrs takes free two maunds of oil seeds and five sers of oil per oil presser to lit chirag Twelve households of Kandu work on grounds free every day in rotation. Ten household of Hajjam run free errand. When zamindar falls ill they remain eager servants to massage his (zamindars) legs and pull his fan and do other work till he gets well. Koiris can sell to the market only the vegetables which remain after malik takes his share. Six households of kumhar will decorate zamindar's house and put thatchets to the roof of his house at the time of festivals and marriage.

The crux of this forced labour was the time when the labour was demanded.

Famines brought out sharply another aspects of the changing relationships between zamindars and cultivators, on the one hand, and the artisans, on the other. Umpteen number of instances were there in the official documents on famine to show that the The jalman-cultivator refused protection to their clients during the famine. Ordinarily paying to the artisans in kinds for their jobs, the cultivators refused to take their wares and to pay them or to employ them during famine due to shortages of grains in their stock and high foodprices. In 1865 famine, Nunias were the worst suffers. With their saltpetre industry destroyed by official duty and compitition, they

28. Selections from Divisional and District Annual Administration Report, 1872-73. Also see, W.W. Hunter (1976 : XII : 22-223) Statistical Account of Bengal, Concept Publishing Company, Delh.

found themselves left high and dry during the height of the famine when the cultivators refused to employ them. They invariably flocked at the official relief centre. In Shahabad district half of them died.

The Report of the Indian Famine commission in 1881 found that the nunias, weavers, kahars had been the most affected by the famine in the Muzaffarpur district. In Madhubani in Darbhanga district, the village artisans were major victims of famine along with the landless. Sonars and Tantis suffered as they had no land.²⁹ Their jaimans did not protect them.

The 1898 famine it was reported that in Champaran the village artisans in Bettah Raj estate suffered most ³⁰ Jolahas, in fact, were the largest visitors to the poor house opened up by the Government for effective relief operation. The landless, jobless artisans refused work in the field by the cultivators. Their jaiman refused them their grains either.

Artisans responded to all these through (a) desertion; (b) petty crimes (c) inefficient work and only occasionally (d) through organised opposition. Buchanan found villages of Patna district deserted. The weavers left these villages for fear of being indentured to labour in the public works. In the entire period of our study only one instances of organised resistance from artisans were recorded in Sasaram in 1870.³¹ In one of the villages of the sub-division the resistance was put up by the Jolahas against employing them as poters. Others artisans supported them. One pensioned subedar of the native army, himself a Jolaha, organised and led the movement.³²

Conclusions in this chapter, therefore, are the following: First, despite the destruction of their artisanal craft under the impact of the de-industrialisation, some artisans like Barhi, Chamar etc still managed to survive at the village level because of localised demand for of their product from necessities of creating and maintaining (a) productive force; (b) basic necessities of life and (c) from social and religious functions. Second, the destruction of their traditional craft with no corresponding accumulation forced the vast artisans to join the classes of agricultural labour and sometimes to become petty tenants. Usually the pattern was that they carry on their

29. Report of the Indian Famine Commission; Appendix (Accounts and Papers), H.C.1881, vol.71; p.53.

30. Appendix to the Famine Report, 1898 being Minutes of Evidence, vol.I, Bengal, pp.44 47.

31. Selections from Divisional and District Annual Administration Report: 1872-73.

32. Selections from Divisional and District Annual Administration Report :1872-73;p 409

craft job, tenant cultivation and the job of agricultural labour, all together. Third the artisans' allowances, both from their traditional work and from their farm job, were usually in grains, determined by customs and tradition. Fourth, the relation between cultivators and artisans also changed. The de-industrialisation itself was associated with market penetration. Besides these, the cultivator-artisan relation was increasingly marked by cultivators' demand for higher efficiency in artisans' work along with the offer of payment to the artisans which were lesser than the normal, customs determined payment. Also, during the crisis, which could be natural or otherwise, the cultivator would often refuse protection to the artisans, which was earlier an integral part of the traditional artisans-cultivators relations. Fifth, within this overarching market relation, many old relation survived, as reflected in abwabs and forced labour. Sixth, the artisans' resistance had been passive primarily, with only one exception of organised opposition in Sasaram in 1870.

Chapter VII

SMALL PEASANTS

Small peasants are peasant farmers who cultivate their small plots of land with the help of their family members. Usually they do not hire in labour except for a few days in busy season. But they often have to supplement their own farm income by working as agricultural labourers outside their own farm and by doing sundry other job. In good years they survive; in bad years they incur debt: This sums up their material condition.

These small peasants are not Tom Kissinger's 'family farm' (Kessinger, 1979; 1974). They do not have the opportunity of earning income from different sources that Kissinger's family farm labour possibly had in Punjab. At the peak of the agricultural season, when off-farm work is available, his on-farm work needs the most urgent attention. His economic condition does not permit him to appoint outside labour for his own farm work so that he could release himself for off-farm work and take advantage of higher wages outside (if any) and earn more. Then there might be caste and other constraints also. If he is Brahmin, he would not go out for work as agricultural labour. Bhattacharya used the 'peasant proletariat' to identify these class classes (Bhattacharya, 1985 : 23-38). We would, however, settle for the more descriptive term "small peasant", i.e. he who works primarily in his small (tenanted) land with his family labour and does off-season job to supplement his farm income and preserve his tiny, family plots and also his family. But he is under constant threat of extinction.

7.1 Differentiation process and Small peasant

The rural society of Bihar was subjected to important changes during the British period. In the literature of economic theory this is known as the process of "depeasantisation". At a particular 'moment'¹ of this process the rural society takes this form (Lenin; 1964 : 172-189).

(1) At the top of the society are lambardar, mukhtar, jotdar, mondal, jethraiya, etc. In terms of legal relationship they are known as (a) village zamindars; (b) intermediate tenures and (c) big raiyat. In the reality of rural society of North Bihar at the time, they

1. For the definition of the concept of moment, see Thompson (1980: 10). Thompson defines historical 'moment' as an adequate period which enables us to observe patterns of class relationships, their ideas and institutions.

are combinations all these three forms.² At the bottom are the two principal repository of rural labour; (a) jan, or majur, or kamaniya, or kamiyan,³ all synonymas for rural labour; and (b) kamia or debt bondage.

Foisted in between are the middle peasants. More than any other class they are the class which is most subjected to this process of depeasantisation. Two contradictory trends are discernable among them at any 'moment'. One section of these middle peasants accumulate land and other assets and go up in the ladder to join the village affluents. The other and probably the larger section, suffer economic disintegration and either join the labouring class or precariously survive as subsistence farmer, while also working in order to keep body and soul of their family together, and also preserve their 'farm'.

We are interested in this second category among the middle peasants. They are socially known as grihassthas (Martin; 1938 : 159). Grihassthas are either low caste people, or occasionally upper castes whose indigence drove them to work their own plough. The upper castes had contempt for these grihassthas. They were 'rar-jati', nich or chotlog; in south-west Shahabad they were rajil; elsewhere in Sahabad Kamina, in South-Bhagalpur 'rar bhoi'; in Tirhut solkanli, and in Gaya, raiyan. For the upper castes all these are epitaph of contempt. Proverb says (Grierson, 1975 : 159).

Kaith Kichhu lelen delan, Barahman Khiyaulen, Dhan Pan puniyanten, au rar jate latiyauten (A Kayasth work on payment, a Brahman on being fed, paddy and betel on being watered, but a low caste on being kicked)

Grierson defined these small peasant as those who lived mainly on the profit of small holding (Grierson; 1893 : 88). In 10 villages of Gaya district specially studied by him, he found that these class constituted almost 71 per cent of the population. In his Notes, Grievson treated these class as part of the poor cultivators and were treated as part of the size group of 5 bighas (3.1 acre) of holding.

7.2 Landholding income and assets of small peasants

Grierson emphasised the following characteristics of this category of cultivators : First their holdings were usually 5 bighas (3.1 acre) or less (2) Nowhere in the Gaya

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2. We have not considered absentee Zamindars. But we have included those petty Zamindars who are absentee in one village, but may be resident in another neighbouring village.
 3. Kamiyans are not Kamia, the bonded labour.

District they were economically self-sustained by their holdings. (3) As a result they always had to supplement their income (Grierson, 1893 : 91-95).

Grierson calculated that these cultivators of Gaya district earned Rs. 42-2 (for a family of four) per year (Grierson, 1893 : 93). Grierson estimated the income of the family labour of these small peasants at the market rates in estimating their income (Grierson, 1893 : 93-98).

It is difficult to agree with Grierson's method of estimating family labour at the market wage rate. In the pre-capitalist labour market of nineteenth century North Bihar the family labour and the wage labour was not strictly substitutable. In the context of capitalist development in Russia, Lenin had described these family labour as under-paid labour which were distinct from free wage labour (Lenin, 1972, I). Lenin argued in the context of emerging capitalist relation in the pre-revolutionary Russia which lent validity to his argument. The social and political situation of the colonised rural society of North Bihar in the nineteenth and early twentieth century cannot be compared with the pre-revolutionary Russia. In his study of the fifteenth century Poland, Kula pointed out that the capitalist norm of cost calculations can not be applied in a precapitalist society (Kula, 1976 : 76). Marc Bloch was perhaps most to the point. He identified this unpaid family labour with 'natural economy' in a precapitalist society and said that the pre-condition for the existence of this 'natural economy' was the non existence of a labour market where the labourer has the right to choose his job at the market rate (Bloch; 1967; Banaji, 1976 : 313-314).

Despite the market penetration, the rural labour market of Bihar during the period was limited by such factors as the caste system, the Kamia system etc. All these restricted the possibilities for these family labour to enter the labour market as and when they were in need for jobs and take up the job according to his own volition. This limitation was further strengthened by the fact that the time when off-farm job was available was also the time when the on-farm work was needed most (Bharadwaj, 1974).

Following this argument, if the family labour is not calculated, the exercise done by us shows that the income of these cultivators are reduced to amount which is much less than that of Grierson. Once this adjustment is done it becomes all the more evident that these small plots provided almost nothing for these cultivators

after the payment of rent. The cultivators were all the more forced to supplement their income ⁴.

The area studied by Grierson was also studied by Stevenson-Moore in order to find out whether Grierson's assertions about the poverty of Gaya peasants were correct or not ⁵. Stevenson - Moore found that the small peasants of Gaya were poor though not as poor as Grierson found out to be. Stevenson - Moore calculated the family labour of these small peasant at the market as done by Grierson. If you adjust the income of the family labour of Stevenson - Moore's small peasants in the manner we have done in case of Grierson, then we find that in his case also the income of the small peasants are less than that calculated by Stevenson - Moore. It showed that the percapita income of the cultivating labours had fallen: In tract I it has fallen from Rs.15.6 to Rs.5.6; in tract III from Rs.16.1 to Rs.8.1; in tract II from Rs.15.8 to Rs.5.9; and in tract IV from Rs.14.8 to Rs.3.5. They had just minimum cash. The need for supplementary income was great. These supplementary sources of income included labour as well as other sources of income.

In their tenanted land these small peasants primarily produced foodcrop for their subsistence. Only a small portion of this land was given to cash crop which were marketed to earn cash for meeting urgent cash commitment (Grierson, 1893 : 98-102). Their tenanted landholding was inadequate to earn even their bare subsistence. They hired out their labour in a substantial manner.

In the village Paharpur ⁶ in Banaili estate in Bhagalpur district out of 93 families, 30 persons, i.e. 32 percent, came within the category of small peasants. Castewise the largest caste was Goala (12), followed by Kunjra ⁷ (9), Sheikh ⁸ (5), Khatwe ⁹ (2) Halwai and Gareri 1 each. No official estimation of their income was available. But the district officials made the remark that these classes did not starve though they were badly housed and badly clothed.

4. Grierson said: "if we exclude other sources of income, 70 per cent of the holdings of the district do not support their holdings"; see Grierson (1893: 95)

5. Report on the Material Condition of Small Cultivators and Labourers in Gaya.

6. Information has been culled out from the report of the manager of the Banaili Estate; See letter no 51, dated 24 April, 1898, in P. Nolan, Enquiry into the condition of the poorer classes, June, 1888, .

7. Kunjra - vegetable sellers. see Risely (1981 : 527)

8. Shaik - N.A.

9. Khatwe - Palanquin bearing and cultivating castes of Bihar; see Risely (1981 : 484).

The major sources of income of these cultivators were : (a) cultivation; (b) income from agricultural labour and (c) income from other odd sources including low paid jobs in the government offices. These jobs were done either in the off-season by the head male member of the family or by another member of the same family. A few details of supplementary work, for example,¹⁰ were like this : (1) The kunjra castes produced and sold vegetable which was their caste profession, besides cultivation of their own holding and working on off-farm agricultural labour work. (2) Mittoo Sheikh's brother worked as Chainman in the survey department for Rs.4 per month. (3) Dullab Sheikhs relation worked as barahil (village-watchman) for Rs.1 per month.

Other information of the village report showed the following : First, The average per family land holding was 1.58 bigha (1 acre); Sheikhs had 1.9 bigha or 1.2 acre, Goalas 1.79 bigha or 1.1 acre; Kunjra 1.5 bigha or .9; Khatwe and Gareris have less than 1 bigha per family. Second Goalas and Kunjras took land on rent in other villages for cultivation. For Kunjras the average holdings outside the village was 1 bigha (.6 acre). For Goalas the corresponding figures were .4 bigha (.25 acre) and 20 per cent. Third, at least one person among the cultivators had let out land: Rootai Kunjra sublet a portion of his holdings in Batai (half share) because he himself could not afford to cultivate (though he himself had about 4 bigha, or 2.5 acre, on rent in the Paharpur village as also the in neighbouring village of Rampur).¹¹ Fourth, their possession of various types of utensils were meagre. Fifth, their possession of animal stock was also very poor. Sheikhs' possession averaged (per family) more than 1. For the rest the average per family figure was less than even .5. Sixth, none of these cultivating laboures had plough. Their possession of spade was also less than 1 average per family. All most all of them had Khurpi and Hansua, the two essential instruments of labours (for both on-farm and off-farm labour).

All of them were indebted, either in money or in grain. The most indebted, the Report said, was the one Gareri family who had an avarage loan of Rs.10 in monetary terms. Sheikh's average debt in money term was Rs.3.2, and in grain 2 maunds. for khatwe it was Rs.2.5 in money and Rs.2 maunds in grain respectively; for Goalas it was Rs.8 and Rs.2 respectively; and for Khatwe it was Rs.2.5 and 2 maunds respectively. The Report

10. Letter dated 24 April, 1888, in P. Nolan. Enquiry into the Conditions of Poorer Classes (1888).

11. Kunjra was poor. Yet he let out possibly because of the difficulties of cultivating the land. See letter dated 24th April, 1888; p.7, in P. Nolan. Enquiry into the Conditions of Poorer Classes June, 1888.

had no mention of interest or how the loan and interest was repaid. But there was at least one Goala family who had taken loan (amount not known) which had to be repaid by labour as per contract which reveals the linkages between the credit and labour market.¹²

Three things can, therefore, be noted in Paharpur villages: First, these cultivators had inadequate land-holding and poorly endowed in agricultural implements. Second, they did off-farm agricultural work including petty government work. Third, they were indebted and at least one of them was paying loans through work.

The information given by the Collector of village khanwah, pargans Dharempur in Purnia district has been presented in Table below:¹³

Table 7.1

	Area of holding area cropped (Bigha)	Output (Mds)	Other income total income (Rs.)	Consum- ption (Mds)	Rent (Per acre)	Nature of other Job
Average per Family	1.45	14.5	26.25	25.5	1.2	1. Ploughman 2. Labour general
Per Capita	.41	4.1	7.5	7.2	Do	3. Journeymen

Source: Appendix A; letter dated 2nd May 1888, in P. Nolan, Enquiry into the conditions of the Poorer Classes.

Table 7.1 has certain specific features: (1) The castes were Musahar. (2) The Musahars cultivated their land which was usually rented. (3) The original table showed that the total income (cash) is equal to their income from other sources. They had been shown in one column in our table. From this table one can infer the following things: (1) Both average per family land holding (1.45 bigha or 1.8 acre) and per capita holding (.41 bigha or .7 acre) were inordinately low. (2) Consumption far outstrip the output from the rented family farm. Output was 14.5 maunds while the consumption was 25.5, i.e. output was a little over half of the average family consumption. Similar was the situation in per capita output and consumption. This meant that consumption had to be met by working outside. The Musahar worked primarily as ploughmen, journeyman and general labour.

12. Letter dated 24 April, 1888, in P. Nolan, Enquiry into the conditions of the poorer classes; p.7.

13. Letter dated 2nd May, 1888, in P. Nolan; Enquiry into the Conditions of the poorer classes, p.2. We restructured the table to meet our requirement.

Among the three Bhagalpur villages studied by Harrison in the 1880s (Harrison, 1890) in village I the small peasants fell mostly in the categories of poor (40 percent) and those who were in difficulties in bad years (38 percent). The poor peasants hired themselves out as agricultural labourers (41 percent) and in the second category eight percent of the total number of persons did so. (The cultivators categorised as 'comfortable' also hired themselves out (44 percent), but mostly in the relatively higher paid jobs like sugar refinery or salt-petre manufacturing and therefore couldnot strictly be called small peasant).

The largest proportion of the poor cultivators came from the backward castes like Koeris (14 percent) and untouchables like Dosadhs (19 percent) and also muslims (50 percent), mostly Jolahas (Table 7). Those cultivators who falls in difficulties in bad years primarily came from such caste as Goalas (22 percent), Koeris (5 percent) and also Mohammedan (34 percent) (Table 7).

Per family average landholdings of the poor was only .69 bigha (.43 acre) inside village and .07 outside the village. Their per family annual stock averaged only .09 number. The corresponding figure for those who were in difficulties in bad years were 3.8 bigha (2.4 acre) inside village, .83 bigha (.51 acre) outside and their number of animal stock per family was 1.05.

In village II, more than 80 per cent of the cultivators were either poor (56 percent) or those belong to that category of labourers who fall in difficulties in bad years (32 percent). Of the poor 61 (59 per cent) hired themselves out as agricultural labourers. In the second category this figure was 7.4 percent.

Poor cultivators in village II came from castes like Koeris (22 percent), Dosadhs (16 percent), Musahars (21 percent) and also Muslims (32 percent), who were mostly Jolahas in this village too. Those in the second category came from castes like Koeris (73 percent), Musahars (9 percent) and Mohammodans (18 percent) (Table 7.2).

In their village the holding size per family of the poor cultivators was 1.3 bigha inside village and 1.2 bigha outside the village. For the second categories these figures were 2.2 bigha in the village (1.4 acre) and 1.1 bigha outside the village (.7) respectively. In this respect the position of both these two categories of poor peasants in village II were better than that of their counterpart in Village I. Their animal stock position was, however, as bad as their brethren in village A.

In village III there was no poor peasants. It was because these cultivators in village III were upper castes cultivators, either Brahmin or Rajputs for whom farmwork was abominable. This also possibly explained larger presence of cultivators in village III who were engaged in their caste profession (Table 7.2). For the first category of farmers the percentage of cultivators engaged in caste profession was 30 percent; for the second 6; and for the third category comprised wholly of 3 Goala families it was 25 percent of the total (Table 7.2). These cultivators were better endowed in terms of landholding. Their animal stock was, however, as bad as their counterpart in other two villages except for those who were in comfortable category (1.3 plough bullock per family).

Table 7.2
Social Origin of small peasants in three Darbhanga Village

	Upper Caste	Goala	Koeri	Dosadh	Husahar	Mohammeden
Village I						
Poor (indebted)	5(36) (24)	-	3(60) (14)	3(100) (14)	-	10(50) (48)
In difficulty Years	7(50) (39)	4(67) (22)	1(20) (5)	-	-	6(35) (34)
Comfortable	2(14) (22)	2(33) (22)	1(20) (11)	-	-	4(15) (45)
Rich (lands)	14					
Village II						
Poor (indebted)	1(100) (5)	-	5(31) (26)	3(100) (16)	4(68) (21)	6(75) (32)
In difficulty Years	-	-	8(50) (73)	- (9)	1(16)	2(25) (18)
Comfortable	-	-	3(19) (75)	-	1(16) (25)	- (45)
Rich (lands)	-	-	-	-	-	-
Village III						
Poor (indebted)	5(50) (100)	-	-	-	-	-
In difficulty Years	5(50) (100)	-	-	-	-	-
Comfortable	-	3(100) (100)	-	-	-	-

- Note : 1. We have clubbed together Brahmin, Rajput and also Bania (an intermediate caste strictly speaking) as upper caste.
2. All these classes, including 'rich', possess 5 bigha or 3 1/4 acres of land.
3. Figures in the bracket are percentage. Figures within bracket below the actual number shows the percentage distribution of castes within the class and those by the side shows the percentage distribution of a caste between class.

Source : Harrison (1890).

No information on indebtedness of these poor peasants had been given by Harrison in his study. But he had added the word 'indebted' in parenthesis in the poor category of cultivators in all the three villages and the word 'lends' in the well-to-do category. This showed, at least by implications, that cultivators in the poor category, i.e. the small peasants, were usually indebted and the rich cultivators were lenders.

The Settlement Report of Muzaffarpur¹⁴ district found large presence of these small peasants in Muzaffarpur. In an intensive study of 22 villages in Muzaffarpur district it was found that 19 percent of the population were in the category of the small peasants (Table 7.3). A large number of them were indebted (23 percent).¹⁵ The per head loan was Rs.1.5 and income from supplementary sources were Rs.22,555 total and per capita Rs.6.3 (Table 7.3A). The sources of supplementary income were usually services like barahils, cook, watchman etc. and the sale of such commodities as ghi, vegetables, cow-dung etc.¹⁶ In some of these selected villages a number of Koeri families, numbering 20, had become poor peasants following the death of the head of the family and other calamities leading to loss of their land.¹⁷

In the district of Monghyr also Stevenson-Moore made intensive study of some of the villages of Narhan estate, which included large number of these cultivators. Stevenson-Moore's information about these cultivators of the Narhan estate in the Monghyr district had been presented in Table 7.3B which shows the following characteristics : In the entire Narhan estate 21 per cent of the total population were those who were partly cultivators and partly labourers. Stevenson Moore's more detailed study of six villages (different from those in table 7.3B) also gives the same percentage figure for the small peasants i.e. 20 percent in the total population.¹⁸ For the entire estate, Dusadh (49 percent) was the largest caste to form this class of the poor peasants (Table 7.3B). Other important castes were Dhanuk (27 percent), Kanu (18 percent), and Nunia (6 percent) among the backward castes (Table 26 B). Kayasthas (1 percent) were the only upper caste who had been counted among these small peasants.

14. Report On the Survey and Settlement Operations in the Muzaffarpur District 1961.

15. Report on the Survey and Settlement Operations in the Muzaffarpur District (1961).

16. This service does not include agricultural labourer. See on this Grierson, (1893 : 106)

17. Report On the Survey and Settlement Operations in the Muzaffarpur District (1961).

18. Final Report on the Survey and Settlement Operations of the Norhans Estate in the Monghyr District. (1898) p.26.

More detailed study of six villages by Stevenson-Moore showed that almost 23 percent of total holding in these villages belonged to these cultivators and their average holding was 1.55 acre (Table 7.3 B). Of the castes, Dosadhs commanded largest chunks of land (15 percent) and their average holding size was 1.38 acre; Nunias have 2.7 percent of the total and their average land size was 1.4; for Kayasthas the corresponding figures were 2.5 percent and 3.3 acre; for Kanu 1.24 percent and .47 acre; for Dhanuk .75 percent and 1.44 acre; and for Turha .25 percent and 2.17 acre.

These three villages of Darbhanga, therefore, shows that (1) these cultivators had small landholding, (2) their other assets were also meagre and (3) they were forced to suppliment their income by working usually as agricultural labourer.

Table 7.3
Poor Peasants of Muzaffarpur and Monghyr District
1892-99

7.3 A. Muzaffarpur District

	Total Population		Income from other Sources		Indebtedness		Migration	
	Number	Percentage to total Population	Total	Per head (Rs.)	Total	Per head (Rs.)	Total Number	Percent to Total Number
22 Villages of Muzaffarpur District	3557	19	22,555	6.3	5,245	1.5	310	8.7

7.3 B. Monghyr District (Narhan Estate)

Castes	Total Population (Narhan Estate)			Six Selected Villages of Narhan Estate			
	Male	Female	Total	Holdings (No)	Holding Size (acre)	Average Size (acre)	Percentage of Holdings by each caste to total Holdings
1. Kayastha	39(1.0)	38(1.0)	77(12)	10	32.62	3.26	2.49
2. Kanu	557(17.0)	601(18.0)	1158(17.7)	5	2.35	.47	1.24
3. Nunia	187(6.0)	201(6.0)	388(5.9)	11	15.46	1.4	2.74
4. Turha ²	-	-	-	1	2.17	2.17	.25
5. Dusadh	1607(49)	1550(48)	3167(48.9)	61	84.47	1.38	15.21
6. Dhanuk	863(27)	891(27.0)	1754(26.8)	3	4.32	1.44	.75
Total	3253(100)	3291(100)	6534(100)	91	141.39	1.55	22.68
7. Percentage of Total holding in the estate				21			

Note : 1. For Muzaffarpur : C.J. Stevenson-Moore, Survey and Settlement Operation in the Muzaffarpur District, 1961 p.392.

Source : 1. For Monghyr : Final Report on the Survey and Settlement Operation of the Narhan's Ward Estate in the Monghyr District, 1898, pp.22 and 25.

These features revealed in these case studies were not isolated and typical of these villages. These were, in fact, only more poignant revelation of the basic features of this class in the North Bihar rural society during the colonial period.

The collector of Bhagalpur,¹⁹ writing about the Banka, Madhepur and Soopole sub-division of Bhagalpur district, said that these cultivators were mostly indebted and they mortgaged their crop even before they were harvested. The settlement officer of Raj Banaili and Srinagar Estate found that in 2 villages of the estate these cultivators had little land and no agricultural implement, including plough. They tried to make up this deficiency by exchanging labour with plough of the big cultivators.²⁰

On Patna district we have the report of the District Magistrate, who estimated from the study of two villages, that a family of 5 needed 1220 sers of food for survival in a year.²¹ This meant that, at 4 maunds,²² the family needed 7 bighas (4.4 acre) for survival, unaided by income from labour. But 40 percent of the cultivators in this two villages had 4 bighas (2.5 acre) or less size of holding, thus implying that they could not survive without labouring at others field.

For the district as a whole, the District Collector of Patna said, the total cost of supporting a ryot's family of four was Rs.33.²³ The total earning of a ryot of 4 bighas (2.5 acre) was about Rs.36, leaving a gap of Rs.3. But the average area of holding of Patna ryots were less than 4 bighas (2.5 acre) with the result that most of them were deficient farmer. They were usually badly clothed, badly housed, and lived on coarser Khesari dal. Even that they did not get all the year round.

The Collector of Darbhanga argued in the same vein. About 60 percent of ryots in Tajpore villages, selected for intensive enquiry, had 4 bighas (2.5 acre) or less. Possibly the holdings of 2 bighas (1.25 acre) or less were more numerous than those of 3 bighas

19. It was found 14 percent of 2 prosperous villages, 19 percent of two average villages and two worse-off villages were small peasants and had these features. Letter dated 7 April, 1888, from A.W.Wall, Collector of Bhagalpur to Commissioner of Bhagalpur, in P. Nolan; Enquiry into the conditions of poorer classes; 1888; pp. 2 and 3.

20. Letter dated 13 April, 1888; from F.W. Collins, Settlement Officer, Raj Banaili and Srinagar Estate to the 'Collector of Bhagalpur', in P. Nolan; Enquiry into the condition of poorer classes; 1888; pp.3-7.

21. Letter dated 2nd June, 1888, from J. Boxwell, Offg. Commissioner of Patna Division to the Secretary to Government of Bengal, Revenue Department; in P. Nolan's Enquiry into the conditions of poorer classes; 1888.

22. Total production is 8 maunds per bigha; half goes as rent.

23. Letter dated 2nd June, 1888; From J. Boxwell Officiating Commissioner of Patna Division To the Secretary to the Government of Bengal, Revenue Department, in P. Nolan's Enquiry into the Conditions of Poorer Classes

(1.9 acre) to 4 bighas (2.5 acre). This was, he said, true about the entire district. These small holders, he added, were badly off and they had to supplement their income by working in others field. Sometimes they even migrated to neighbouring district during the harvest period in search of work. They got there higher wages and ate Marwa (Indian Corn) in the day.

From the above discussion one can, therefore, make the following conclusions about the small peasants: First their family hilding was small. They were poorly endowed in terms of agricultural implements and animal stock. Second, they cultivated their small holding mainly by family labour. They made up their poor supply of animal and plough by exchanging their labour with the plough and animals of their affluent neighbours. Third, their subsistence farm gave them bare subsistence and compelled them to make up their paltry income from agriculture by working as agricultural labour etc. Fourth, they were usally indebted. Instances were there which showed that these loans were often sought to be repaid by working as agricultural labour in debtors field or by mortgaging the crops before they were cut. This suggests linkages between of credit market and labour market and also between credit market and product market.

Chapter VIII

KAMIA OR THE BONDED LABOUR

In this chapter we deal with the Kamias. They differ from the earlier categories of labourers in that they do not have any property particularly land.¹

The system of attached, unfree labourer² is not exactly a colonial creation. It, in fact, predated the Mughal period. The Maurya state used slave labour for public works; their rich landowners employed slaves for agricultural operations (Sharma, 1980). There are evidences of sale and purchase of girl slaves in 16th, 17th and 18th centuries in the Mithila region of North Bihar : these slaves were probably used for domestic purposes and for sexual exploitation.

The Sanskrit documents unearthed in the Mithila region indicated the existence of various forms of agreements binding artisanal and general labour in various kinds of works (Thakur, 1958). Buchanan found fairly widespread use of slave labour in the Patna-Gaya-Purnea region of North Bihar. For Bihar and Purnea he gave the following distribution of slave labour :

Table 8.1
Slave Labour in North Bihar

Occupation	Slaves			
	Bihar		Purnea	
	No	Percent	No	Percent
1. Domestic Work	5,055	15	790	13
2. Partly Domestic, Partly Agriculture	9,270	29	1,700	28
3. Entirely Agriculture	18,495	56	3,650	59
4. Total	38,820	100	6,140	100

Source: 1. For Bihar : Francis Buchanan, An Account of the District of Bihar and Patna in 1811-1812; p.787; (2) For Purnea: Francis Buchanan, An Account of the District of Purnea in 1809-10; p.607 and 608. Both vols. published by Bihar and Orissa Research Society, Patna, 1938.

Of these slaves (Table 8.1), 56 percent in Bihar and 59 percent in Purnea were employed in agriculture; 29 percent in Bihar and 28 percent in Purnea in both agriculture

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1. Buchanan distinguished the kamias and the landless labourers from others as "those who cultivate land in which they do not have any property"; Martin (1838).
 2. The term "attached, unfree" have been used here loosely to include all unfree labour.

and domestic work; and 15 percent in Bihar and 13 percent in Purnea in domestic work only. In Bhagalpur and Shahabad also, Buchanan found slave labour though he did not provide any estimate of their number (Martin, 1838, III : 98-99; I : 479).

Buchanan, however, in his diary frequently wrote about the decline of slave labour in this region during his period. Number of factors contributed to this decline. The slaves could be maintained only with enormous social and economic power which the slave-owning landlords and rich cultivators were often unable to muster (Kosambi, 1956 : 354). Further, the slave owners deteriorating economic condition in Bihar made the maintenance of slaves uneconomic. Faced with this, as also the social disapproval of the sale of slave labour, the slave owning zamindars and rich cultivators quietly allowed their slaves to go free and earn their own living (Martin, 1838, I : 125). For example, the zamindar of Bedopur, in thana Barh in the Patna district, set free his eighteen slaves who, however, continued to live with their ex-master. It is quite likely that many of these former slaves became Kamias.³

Though the colonial administrators have used such words as 'pure slavery', 'chattel', 'half-enslaved labour', 'bondmen', 'serf', 'really serf', 'ascripti glebae', to describe the Kamias, the later were not slaves; they were not bought and sold. Grierson's observation about the Kamias was nearest to the reality : "Formerly this was an actual sale of himself and his heirs forever, but this having been declared to be illegal, he now hires himself, in consideration of a stated advance or loan, to serve for a hundred years, or until the money is repaid, which comes to very much the same thing" (Grierson, 1893 : 110). Grierson's allusion was to the changes in the labour relation : from the direct ownership of slave labour to the control over the labourer's work through credit.

8.1 Origin of the Kamia

A number of factors contributed to the creation and continuation of the bonded labour in different regions. Grierson (1893) argued that the widespread prevalence of self-supporting cultivators meant dearth of labour to that section of the cultivators who employ labour. This led to the necessity for these cultivators in Bihar to go for forced labour. Srinivasan (1966 : 42) pointed out that the prevalence of unexplored

3. Final Report on the Survey and Settlement Operation in the District of Patna, 1915; p.29.

regions that enabled agricultural population to acquire land easily and refuse the work of agricultural labour might encourage the big cultivators in an area to go for the bonded labour. In a land-abundant economy, Habib ⁴ said, "if there is no caste restriction on the acquisition of land, it becomes difficult to get labour and encourage the bonded labour system".

Patel (1952) said that lack of employment opportunities and unforeseen fluctuations in agricultural output prompted agricultural labour to accept bondage in some areas. The bondedness also originated from the monopolisation of land in a few hands through enactment etc and also through the enslavement of the dispossessed peasantry. This was often the origin of bondedness among the tribals.⁵

Breman, (1974 : 13-16) however, suggested a wider analytical framework. The relationship between land owner and farm servants in a traditional society, he said, had to be judged in the wider caste relationship known as the jajmani system. Breman, reformulated the concept of jajmani system as expounded by Wiser.⁶ For him the jajmani system expressed the differences in purity, material wellbeing and power, which sometimes acted together and sometimes acted in opposition and these determined the social positions of the members of a caste in the hierarchy. In the light of this relationship, the servitude of unfree labour was complicated and mitigated by a relationship of patronage (Breman, 1974 : 27).

In Breman's analysis the crucial aspect was his understanding of the word 'patronage'. In Gujarat, the dhaniamo took hali for social and ritual reasons. Social status and power rather than profit maximisation was the motivating elements for maintaining hali by the dhaniamo patrons. It was expected, as hinted by Breman, that with the growth of commercialisation of agriculture, the urge for social status and power would be yielding place to a profit maximising instinct. Things may not, however, always happen this way (Bhattacharya : 1985). In Bihar, at least, commercialisation of agriculture by itself did not lead to freedom for the labouring classes. It came where the later classes put pressure for change from below (Prasad, 1973, 1973a).

4. See Habib in Enquiry 4; see also, Pandian (1990) and Breman (1974) on this.

5. For social anthropological analysis of the labourers attitude, See Kumar (1965).

6. For a review of the jajmani system, See Beidelman (1959) and Gough (1960).

The rural society of North Bihar in the nineteenth and early twentieth century was not 'traditional'. The colonial state had already introduced private property in land, which, though limited, had eroded the very basis of village society based on the economics of the caste system⁷. Commercialisation of agriculture and the demand for revenue by the state had enforced production for market though cultivation based on peasant farming remained the dominant form of production organisation. The law courts had declared Kamiauti bond void in a number of cases even before the passing of the Act.⁸ Broadly speaking the specific feature of this society is the non-correspondence between different structures of the society — the economic, social and political, each sometimes supporting and sometimes opposing the other. The Kamias and the Kamiauti system is the product of this complexities.

8.2 The castes of the kamias

Kamias are mostly former agricultural labour.⁹ In a study of eight villages in Gaya district in 1888,¹⁰ it was found that almost 56 percent of the landless agricultural labour were kamias.

7. See Bagchi (1982) and also Gough (1960 : 83-91).
 8. Indian Law Reports, Calcutta, Vol XLII, p.742; Sharf-Uddin and Cox March, 1965; also Patna Law Journal, Vol III; p.412.
 9. Bonded ploughmen in Bihar is generally known as Kamia. The Kamiauti Agreement Bill lent credence to this usage. But in actual life these attached labourers were known variously in various parts of North Bihar with specific jobs assigned to them by customs and tradition. The following table is an example :

1. Darbhanga	a) <u>Bahia</u>	Virtually hereditary servants (personal)	Only maintenance work
	b) <u>Barjana</u>	Wholetime labour	Loan given
	c) <u>Jan</u>	Bonded ploughmen	Loan given
2. Purnea	a) <u>Harwari</u>	Only Ploughing	Loan given
	b) <u>Janauri</u>	all types of work	
3. Chotanagpur	a) <u>Jan</u>	Agricultural Work	
	b) <u>Khand Bandhua</u>		
	c) <u>Khamianti</u>		
	d) <u>Harwabe</u>		

- Sources : 1. Letter dated 12 September 1919, from J.A. Hubbak Secretary to Government to Secretary to Government of India, Department of Revenue and Agriculture, No.7596/S-25 R, Proceedings Volume 828, October 1919, Bihar State Archives, Patna.
 2. Letter dated 2 June, 1888, in P. Nolan, Enquiry into conditions of the poorer classes, Revenue Department, 30 June 1888.
 3. Letter dated 15 October, 1889, from Mr. Carstairs, Officiating Deputy Commissioners of Santhal Pargana, to the Commissioner of Santhal Pargana, Bhagalpur, Commissioners Record, Basta 887-89, Bihar State Archives, Patna.
 10. C.J. Stevenson-Moore, Report on the Material Conditions of Small Agriculturists and Labourers in Gaya, Calcutta, p.29.

The castes of these agricultural labourers were kahar, chamar, dosadh, musahar and rajwar. The kamlas were drawn from these castes (Table 8.2) :

Table 8.2
Social Origin of Kamlas

Caste	No.	Percent
1. Kahar	125,770	30
2. Chamar	84,115	20
3. Dosadh	110,192	26
4. Musahar	58,280	14
5. Rajwar	42,269	10
6. Total	420,526	100

Source: C.J. Stevenson-Moore, Report on the Material Condition of Small Agriculturists and Labourers in Gaya, p.29.

From Table 8.2 the following can be inferred : (1) The kamlas were mostly drawn from the ranks of agricultural labour, if their castes are taken as indication of their occupation. (2) They came from two broad categories of castes. One is the lower castes like dosadh, musahar and rajwar. The others are the artisanal castes like chamar and kahar.

In Shahabad, the district officer wrote, the agricultural labourers were comprised of lowest castes like dosadhs, chamars, and even some banias.¹¹ In another study of some selected villages of Muzafferpur district between 1892-99, Stevenson-Moore found that 25 percent of the pure labourers were attached to either landlords or cultivators.¹² The Collector of Bhagalpur reported in 1888 that the percentage of labourers working with one ryot was 50 in Banka thana, 60 in Madhepur thana, and 42 in Supol thana. The Collector described them as attached labourer.¹³

Table 8.3 further elaborates the caste linkages of the kamlas in the districts of Bihar : (1) They were from castes like Dosadhs, Musahar, Rajwar etc. (2) They were also from artisanal castes like Jolahas (3) Or they were agricultural castes like Kurmi, Kahar etc.

11. Letter dated 2nd June, 1888, in P. Nolans Enquiry into the condition of poorer classes, July 1888.

12. C.J. Stevenson-Moore, Survey and Settlement Operation in the District of Muzaffarpur District, 1892-1899, Patna, 1961.

13. Letter dated 10 April, 1888; from John Beames, Commissioner of Bhagalpur and Santhal Pargana to the Secretary to the Government of Bengal, Revenue Department; in P. Nolan, Enquiry into the condition of poorer classes, July, 1888.

Table 8.3
Castes of Kamias

District	Castes
1. Patna	Musahar, Dom, Kahar, Dhanuk, Kurmi and other low castes.
2. Gaya	Chamar, Dosadh, Kahar, Musahar, Rajwar, Kurmi, Bhulnyan, Rajwar, and other low castes and aboriginals.
3. Shahabad	Kurmis, Dosadh, Chamar, Banla, Jolaha.
4. Munghyr	Musahar, Dosadh.
5. Purnea	Musahar and other low castes.

Source: 1. Survey and Settlement Reports, various districts.
2. L.S.S. O'Malley, Bihar District Gazetteers relevant volumes.
3. W.W. Hunter : Statistical Accounts of Bengal.

In tribal dominated districts of Hazaribagh, the tribals were dispossessed of their land and made to work as Kamia. The tribals often consented to this arrangement as otherwise as tenants, they were often forced to do 'begar'.¹⁴ The native, indebted Kharwar tenants in the hilly tracts of the Shahabad district were dispossessed of their land and were compelled to work as kamia. The causes of their indebtedness were usually the crop failures and high rent (C. S. E. 1879). In a village these tribals accepted the bond of kamia as that was the only way to get a job in villages for a stranger.¹⁵

In Hazaribagh district, the big cultivators employed their tenants to extend cultivation by clearing jungle and then forced the later to work as their kamia.¹⁶ It was found that the under-ryyats of the Maksudpur estate in Gaya district were mostly the kamias of the big cultivators.¹⁷

The Kamias of North Bihar, therefore, had the following linkages : (1) The kamias were drawn primarily from the ranks of the agricultural labourer. The castes of agricultural labourers were the castes of kamias. (2) In tribals areas the tribal tenants were often forced to become kamia to avoid being forced to work unpaid in the

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- 14.. See T.W. Bridge on Kamias in Palamau district. The dispossessed peasantry, landlessness, high rent and threat of begari were found to be the main causes of agricultural labourers becoming kamia there. Letter dated 12 September 1919, from J.A. Hubbak, Secretary to Government to the Secretary to the Government of India, Department of Revenue and Agriculture, Revenue Department, No.7595/S-25R, Proceedings Volume 828, October 1919, Patna State Archives, Bihar.
15. Moral and Material Progress, (1901-02).
16. Letter dated 12 September 1919, Proceedings Volume 828, October 1888, Patna State Archives, Patna.
17. Final Report on the Survey and Settlement of the Maksudpur Estate, Gaya District; p.9.

zamindar's land. (3) Occasionally, the village outsiders became kamia to get jobs in the village and (4) Sometimes the kamias were also undertenants who took to the life of kamia as it ensured jobs and also the land which was the surest protection against uncertainties of labour markets.

Slave labours were employed mainly by big landlords. The kamias were employed by big upper caste cultivators though some zamindars had their kamias too. Slaves were kept primarily for ostentation. On the other hand, the kamias had more than one use (Kosambi, 1956 : 348-354). The social institutions of the caste system prohibited the upper caste cultivators from doing any manual labour, particularly working of the plough. This necessitated the employment of Kamias. Grihasthas¹⁸ and Chasas, who touched the plough, were the epitaphs of social indignities which the upper caste cultivators shunned invariably.¹⁹ For the Rajput military aristocracy the touching of plough was an act of indignities. They, therefore, needed Kamias. The affluents among the other castes also inculcated this culture whenever their affluence enabled them to worm up their ways in social hierarchy.

The other reason for keeping kamia was the necessity of assured and pliable labour supply for Bihar's short agricultural operations limited by the monsoon.²⁰ One spokesman of the Zamindars from Barh in the Patna district testified to the Royal Commission on Agriculture that the Kamia or 'ploughmen system' which was dying should be revived as there were invariably shortages of agricultural labour in Patna district²¹ in the busy season. In their notes and memoranda many British officials

18. See Martin (1838, I :159 and 300). Jotiyas (ploughman) are socially contemptible; and Chasas are ploughing tribes.

19. Buchanan's diary is replete with such references. We provide some references as illustrations only : (a) See Vol I : 110, on Asraf of Bihar; (b) Vol I : 490 and 492 : On Brahmin and Kayasthas of Shahabad; (c) Vol II : 111 and 120; Rajputs of Shahabad touched plough, but because of their violence and power, their impurity was not questioned; (d) Vol IV, 151; Pathan were poor, but did not touch plough. The Sheikhs were also poor, but they were free from such taboo. The British officials enquiring into social and economic life of Bihar villages, more or less, repeated Buchanan. See, for example, Survey and Settlement Report in the District of Gaya, p.63; and L.S.S. O'Malley, Bihar District Gazetteer : Gaya.

20. Note by T.W. Bridge, the Secretary to the Board, quoted in letter no 17-12 of 19/5, dated 26 January, 1920, by T.W. Bridge in his opinion on the Bihar and Orissa Agricultural Labour Bill, 1920, in the Bihar and Orissa Kamiauti Bill, 1920, Legislative Department, Government of Bihar and Orissa, Bihar and Orissa, Patna, 1920; Bihar State Archives, Patna.

21. Royal Commission on Agriculture, Vol XIII : 450. Interview to the Commission by Maulvi Saiyid Mohammad Ahsen Khan, Zamindar and Secretary of the Barh Agricultural Association, Barh, Patna District.

pointed out the relevance of the Kamlauti system in the agrarian relations in Bihar and urged for non-interference on the part of the government in the system on the ground that it ensured control over labourers who often wanted to desert their masters.²²

8.3 Kamias and their income

Buchanan dealt with the income of Kamias and their job conditions in some details. For the Patna district he gave two examples : one from Azimabad pargana and the other from Nawada (Table 8.4). It shows, first, that Kamias do all kinds of work. Not only did they do agricultural work but also attended his master's household works. And he worked throughout the season. When he had no work at his master's house, he worked in his own (Kamia's) field. In Nawada and in Azimabad, where he was not given any land, he worked outside during their off-time. But Kamias off-time being usually the agricultural off-season also, he got only odd jobs for a pittance. In Bhagalpur also, the kamias suffered similarly.²³

Kamia was paid allowance ²⁴ at the rate of 3 sers of grain or 1.5 to 2 paysas and half ser porridge. The rate was less than that of free agricultural labour (Table 8.4, note 2).

Usually Kamia also got a loan and, occasionally, a plot of land. The loan amount varied. In Patna it was Rs.40 or less; in Nawada Rs. 2 as advance (Table 8.4); in Bhagalpur Rs.5 to Rs.20 (Martin, 1839, II). The land may or may not be given. In Azimabad, for example, the kamias were not given any land. In Purnia, they were given just a hut to stay on (Martin, 1838 : II). Total income of a Kamia in Azimabad in Patna district, was Rs.16-13 anas and in backward Nawada, it was Rs.20-9 anas (Table 8.4).²⁵ The higher income of Kamia in backward Nawada is probably explained by the fact that Kamias of Nawada had a plot of land whose produce added to his income. Though the

22. Letter dated 15 oct, 1889, from the Officiating Deputy Commissioner, Santhal Pargana to the Commissioner of Santhal Pargana; Bhagalpur Commissioner Record, Basta - 887 to 885, Bihar State Archives, Patna.

23. In Bhagalpur his hours of work in the field depended on number of bullocks his master had. If the later had 4 bullocks the Kamia worked 6 hours; if he had 6, the Kamia worked 8 hours. In Purnea he worked 9 months in his master's field and worked outside in off-season; (Martin 1838, Vol II : 226).

24. Breman used this term instead of wages. See Breman (1974).

25. Estimated by Buchanan. Buchanan's estimated total of grain and chattu in Nawada does not add up to the total income given in the text. It may be that allowances from other sources were also added to arrive at the total income, See M. Martin, (1838, Vol I : 308).

Kamia's individual income in Azimabad was less than that of Nawada, the total income of the Kamia family in Azimabad was higher than that of the family in Nawada as because the women and children of kamia family in Azimabad (Patna) probably had opportunities of extra earnings which their counterpart in backward Nawada did not have. The women in Nawada collected Lara and did nothing else. Possibly because of this opportunities of extra earnings, the kamias of Patna district did not get any land.

Buchanan did not give the expenditure of the Kamias for the Patna district as a whole though his report suggested that the free agricultural labourers' wages were higher in Patna district than that of the Kamias. In case of Bhagalpur and Purnea also, Buchanan makes this comparison. In Bhagalpur, on an average a Kamia spent Rs.24 a year, but his allowances from grain and harvest added up to Rs.15. It fell on the womanfolks of a kamia family to make up the deficit by doing odd jobs; e.g. gleaning, reaping etc. (Martin, 1838, II : 226).

In Purnea also the kamia's average expenditure worked out to be Rs.24, and his family's annual earning totalled Rs.20-25 per year, leaving a deficit of Rs.3.75 annually. This deficit Kamia met either by borrowing or by pilfering (Martin 1838, IV : 296-297).

From Buchanan's surveys we can conclude, first, kamia's entitlement had three component : (a) subsistence allowances, (b) loans (c) (sometimes) land for cultivation. But his allowances were less than the agricultural labourers. He had to surrender half of the produce of his land to his employer; then kamia could be set in any menial work, he worked throughout the day; his hours of work were determined in some places by number of bullocks that his employer possessed. He was in constant deficit, which was met either by loans or by pilferage.

From Grierson's Notes on the District of Gaya, written in 1888, we get the details about the material conditions of kamias in Gaya district during the period (Grierson, 1893). Grierson frequently contrasted the material conditions of Kamia with that of mazdur, the casual labourer. He, in fact, asserted clearly that only difference between kamia and mazdur was in their mode of allowance payment and greater independence of mazdur.

Table 8.4
Wages of Kamia

Patna District (Pergana Azimabad)					Nawada area		
	Months Worked (No)	Income			Months Worked (No)	Income	
		Paysas	Chattu (Ser)	Grain (Ser)		Paysas	Sattu (ser) Grain (ser)
1. Ploughing	6	384	91	-	6		91 546
2. Watering	2	180	30	-	1		50 90
3. Reaping	1 1/2	-	-	310	2		- 600
<u>Ati</u>	-	-	-				- 360
<u>Lara</u>	-	-	-				- 1050
4. Threshing	1 1/2	-	22	40	1		- -
5. No work (as cultivating own plot)					1		
6. Repairing Master's House	1/2	45	-	-	1	0-1-61/2	15 90
7. No work	1/2	-					
8. Total		589	143	350		0-1-61/2	121 2736
9. Total Income (Rs.)		16-13-0				1-11-8	18-15-4
10. Net Income							
Men (Rs.)		14-0-0				22-1	1/2-0
Women (Rs.)		8-0-0					
Children (Rs.)		4-8-0					
Family		26-8-0					
11. Kamia also gets							
a) Land : 5 to 20 Kathas or .16 to .63 acre							
b) Loan (advance) : Rs.40 or less							

- Note : 1. For cultivating land Kamia gets seeds and plough and gives half produce to master.
2. Kamia's rate of wage is 3 sers grain or 1 1/2 to 2 Paysas and 1/2 ser broiled porridge. Day labourers in Patna gets at the rate of 3/4 sers grain or 3/4 Paysas; i.e. 4 to 6 sers coarse grain. In Nawada they get one-third more than Kamia.
3. Rs.2 to kamia as advance in Nawada.

Source : M. Martin, The History, Antiquities, Topography and Statistics of Eastern India, 1976. We have used the reprint volumes.

Kamias in Gaya district in 1888 got as much daily grain allowances as majdur (3 or 4 sers), but no breakfast which, in case of mazdur, was 1/4 sers grain daily (Table 8.5). Grierson estimated the value of breakfast given to the labourers at 90 ser or Rs.2.25 annually. The Kamia made up this deficit by occasional gifts (usually in paysas) and cooked remnants of the repast that Kamia would receive (Table 8.5). The Kamias, who were mostly lower castes, accepted these offers with gratitude.

Table 8.5

Wages of Kamia : Gaya District

Item	Kamia	Day Labourers
1. Wage rates	1. 3 or 4 sers grain daily 2. No breakfast 3. Occasional gifts (<u>pagar</u>) 4. Cooked left over of food	1. 3 or 4 sers grain daily 2. 1/4 ser grain " <u>lukum</u> " (breakfast)
2. Thatching	3 sers daily	1 anna to 3/4 <u>paysas</u> per day
3. Harvesting	1 sheaf in 20 cut to 1 sheaf in 12 cut	1 sheaf in 20 cut to 1 sheaf in 12 cut
4. Grain in which salary is paid	Paid in inferior grain like <u>Masur</u> , <u>Khesari</u> , grain	Paid in grains of the crop be cuts at the day
5. Total Income (essential) for labour	25 Maunds annually	27 1/4 maunds annually or Rs.41.75 annually
6. Land ³	5 <u>Kathas</u> or 0.31 acre or less = 2 maunds or Rs.2 annually. (<u>Kamia</u> gets half of total produce)	
7. Total Income	Rs.43.75 annually	

- Note : 1. Kamia gets Rs.10 as advance.
2. Kamia does not get any breakfast. Its estimated annual value is 90 sers or Rs.2.25. Grierson treated this as annual interest of the advance to kamia, which comes to 22.5 per cent per annum.
3. For cultivation of his land Kamia got seeds, cattle and plough and gave his employer half of the produce.

Source : G.A. Grierson, Notes on the District of Gaya, Calcutta, 1893.

Few other aspects of Kamia's allowance are also note worthy First, Kamia got same allowance (3 sers daily) for all work. Second, only in case of harvesting both kamia and mazdur got same amount at the rate of 1 sheaf out of 20 cut to 1 sheaf out of 12 cut (Table 8.5). Third, the cash component of the Kamia's wage was very little, except a few payasas of occasional gift. He got paid in inferior grain like masur, khesari and the like. Mazdur, on the other hand, got the grain of the crop he cut. Fourth, the Kamia's allowance was determined by custom. Goes the aphorism in this connection :

- 1) That a Kamia gets a quarter of the outturn of his work,
- 2) That the usual produce of one plough (i.e. one kamia) is a hundred maunds (Grierson, 1893 : 112).

Fifth, in case of majdur, the market demand did have some role. In peak period, at least, majdur got better wages; eg. in transplanting or in thatching. For Kamias the customs determined the allowances which remained the same in all operations.

The Kamia, he reported, was attached to his master who did not give them more than sufficient to keep him in good working order.²⁶ The description of the Collector of Shahabad about the Kamias of Gaya had the same refrain²⁷ : Theirs, he said, was the minimum standard of comfort in the district. They were entirely depended upon the masters who treated them as their chattels and the Kamia obeyed them. The kamias were paid 4 sers of rice or sattu during agricultural season and 3 sers off the season. In the village Kajah Musahri, the District Collector of Purnea found the system of hiring plough servant for 8 anas a month which, according to him, resembled the slavery.²⁸ For an advance of Rs.15 to Rs.20 the ploughmen agreed to work half a day everyday for ever for his master. The situation hardly changed even in the early twentieth century. In 1928, the Royal Commission on Agricultural reported that in Hazaribagh, the Kamia's wage was about one-third of the agricultural labourer's wage.²⁹ In his note to the Government of India, J.A. Hubbak, the Secretary to the Government, said that in the Patna district the kamias and their families were given only subsistence allowance in grain. No cash wage was given to them.³⁰ In Darbhanga district the personal servants were called Bahia and his family got only maintenance allowance and occasional gifts.³¹ In Purnea district the ploughmen Harauri got Rs.1 to Rs.2 a month which might be credited against the advance, (i.e., he did not get anything in hand) or a kind wage in grain, which was usually some maunds of grain annually, except cereals like rice and wheat.³²

The Secretary, Board of Revenue, T.W. Bridge, quoting the experience of a civilian, gave the following description of a Kamia's plight:

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26. Sterenson-Moore, Report on the Material Condition of Small Agriculturists and Labourers in Gaya District, Calcutta.
 27. Letter dated 2nd June, 1888; from John Bosewell, Officiating Commissioner of Patna Division to the Secretary to the Government of Bengal, Revenue Department; in P. Nolan, Enquiry on the condition of poorer classes, Revenue Department, 30 June, 1888; p.7.
 28. Letter dated 21st April 1888; p.2. and 2nd May, 1888; p.4, in P.Nolan's Enquiry into the conditions of the poorer classes.
 29. Report On the Royal Commission on Agriculture in India Government of India (1828: 434).
 30. Letter dated 12 September 1919, No.7596/S-25R, from J.A. Hubbak, Secretary to the Government, to the Secretary to Government of India, Département of Revenue and Agriculture Revenue Department, Government of Bihar and Orissa, Proceedings Vol No.828, Bihar State Archives, Patna; p.3.
 31. Letter dated 12 September, 1919, No.7596/S-25R; p.3, Proceedings Vol No.828, Bihar State Archives, Patna.
 32. Letter dated 12 September, 1919, No.7596/S-25R; p.3, Proceedings Vol No.828, Bihar State Archives, Patna.

"When asked what on earth he (the Kamia) was doing, he replied that he was a Kamia, that the handful of grain represented his wage for a full day's work, that he found himself unable to satisfy hunger with such a dole unless he increased its bulk, and that experience had taught him that the dust of that particular road was superior to the sweeping of other neighbouring road!".³³

The situation in the fourth decade of the twentieth century was no different basically. In village Darwan³⁴ in Patna district, it was found that (a) the attached labourers were mostly from the families of agricultural labourers; (b) their castes were Chamars and Kahars; (c) the casual labourers, who were mostly poor peasants, were better off than the attached labourers; (d) the attached labourer were given land, called topra, and not less than Rs.300; (e) their wages were less than casual labour and usually in grains (Table 8.6).

Table 8.6
Wages of Attached Labourers ³⁵

Attached Labourers		Agricultural Labourers
1. a) Ploughing and	2 sers <u>Khesari</u> or paddy 1 ser <u>sattu</u>	Rs.1 1 ser rice 1 ser <u>Sattu</u>
b) Weeding	<u>Nasta</u>	<u>Nasta</u>
2. a) Preparatory operations	3 sers <u>Khesari</u> or paddy 1 ser <u>Sattu</u>	
b) Irrigation	<u>Nasta</u>	
c) Sowing		
3. Transplanting	2 ser paddy 1 ser <u>sattu</u> <u>Nasta</u>	

Note : 1. Sers are standard ser.

2. We have omitted the estimated money value of wages calculated (in 1948-49 wholesale price) in the original table.

Source : Report On An Enquiry Into the Conditions of Agricultural Workers in Village Darwan.

33. Mr. T.W. Bridge, Secretary, Board of Revenue, letter dated 4 August, 1920, p.6; in Extracts from the Proceedings of the Legislative Council of Bihar and Orissa, 10 September, 1920.

34. Report on An Enquiry Into the Condition of Agricultural Workers in Village Darwan, (1959), pp.5-11.

35. In the official literature the definition of attached workers' has undergone changes. See for example Report on Intensive Survey of Agricultural Labour, Ministry of Labour, Government of India, Delhi, 1955; Vol 3, p.3. The attached worker are being treated as those who is under contract to work for more than a month. Any contract can put any type of restriction on contracting parties under certain conditions which both the parties agree to abide by. This should be distinguished from the contract of Kamia, the debt bondage, in which the later agrees to forgo his right to choose and his right to decide. Such definitional changes do not mean that the bondage has disappeared from Bihar. See, for example, Prasad (1973 and 1973a).

In the light of these description, Stevenson-Moore's comment on Kamia of Gaya district made in 1880s is worth noting :

"This is the one class in Gaya that is entitled to the sympathies of the philanthropists. The members of the landless labouring class, other than Kamiyas, wonder from village to village in search of work. They are free, and if they get the opportunity for bettering their condition, can seize it, but the kamiya can never have such an opportunity. He is attached to a master who does not give him more than sufficient to keep him in good working order. If he deserts, he is driven back by public opinion When not required by his master, he is allowed to earn what he can The only compensation he derives is that in time of famine his master cannot allow him to die of starvation. He can neither profit by his industry nor suffer from his indolence".³⁶

8.4 Nature and extent of bondage

Loan is the beginning of the Kamia's life of bondage. The necessity of loan arose for many reasons. Some illustrations are given below:³⁷

- (1) Sohan Bhuinyan of village Diha, District Bihar, took an advance of Rs.24-14 from Jainil Singh, a Rajput of Diha and agreed to work as Kamia and menial servant for him. He voluntarily bounded himself and his decendent to plough on nakdi and phaoli lands of Jinu Singh and to grow cotton, sugarcane etc. and work wherever the lands of Jainu Singh might be situated and to do all menial work without protest.
- (2) Somar Rajwar, son of one Gayan Rajwar, of Andheri Bari, district Gaya, was by profession a labourer and a Kamia. He had taken loan from Babu Bhikhari Singh of the village to meet his expenditure in food and clothings. Since nobody would give loan to him without Kamiauti agreement, he requested Babu Dhanpat Singh, son of Babu Gajadhar Singh, of Andheri Bari, by profession agriculturists and service holder, to advance a loan of Rs.13-4 on Kamiauti bond executed on stamped paper. He bounded himself and executed the document agreeing to assist the agriculturists with his wife in all work of Kamia and in all agricultural operations like sowing etc.
- (3) One musahar of village Mablepur, district Manghyr, bounded himself for Rs.5 in cash to celebrate his marriage, to Babu C.D. Rajput, and agreed to plough, sow, irrigate, and reap the fields of C.D. and perform all the duties of Kamia or bondmen.

Sohan Bhuinyan, a Chotanagpur tribals, took loan for unspecified reason. Somar Rajwar took loan to pay off an earlier loan incurred to pay off another loan. And the musahar had taken loan to meet his marriage expenses. None of these three had land and their income was not enough either for meeting the expenditure of their sustenance or their social necessities. This made them to sign the bond.

36. Stevenson-Moore, Report On the Material Condition of Small Agriculturists and Labourer in Gaya, Calcutta, p.29.

37. First two examples are from Report On the Survey and Settlement Operations in the District of Gaya (1911-1918), and the second from Marlin (1877, V : 113).

In Table 8.7, we have presented the nature of these bonds and their reasons in detail. It is taken from various sources and in presenting them we have adopted Finley's form of presentation. Finley (Finley, 1964 : 233-249), in his article "Between Slavery and Freedom", suggested that in any analysis of the ancient slavery "the antinomy, slave-freed on," should be avoided. Instead, he says, the social status in such societies could be viewed on a broad spectrum of continuous of statuses between slavery and freedom. In the light of this, he suggested a catalogue of right and duties on the basis of which one can analyse the 'freedom' and 'unfreedom'.

Table 8.7
Rights and Duties of Kamia

Item (suggested by Finley)	Remarks on <u>Kamia</u> 's rights and duties
I Power/lack of power over human labour and movements (one's own as anothers) :	<ol style="list-style-type: none"> 1. No power over his own labour (work every day, whole day and does all work). 2. Can not change job. 3. Can not leave village (e.g. to visit relatives). 4. Can not migrate.
II Privileges in the area of family :	<ol style="list-style-type: none"> 1. Bond : sometimes hereditary; sometimes son compelled to sign new bond to repay father's debt 2. No protection against famine (the master sometimes leaves <u>Kamia</u> on his own during famine, leaving him to join relief camp). 3. Often wife and son's labour is bonded.
III Power (or Immunity) from punishment :	<ol style="list-style-type: none"> 1. Master can punish <u>kamia</u> for absence, negligence of work etc. (Day's wage is added to loan, if absent for a day; if deserted, interest is added to loan).
IV Privileges and liability in judicial process:	<ol style="list-style-type: none"> 1. Bonds are illegal; but has social sanctions.
V Privileges of (or Absence of) Social mobility	<ol style="list-style-type: none"> 1. Desertion is difficult (Customs and public opinion discourage it).
VI Claim (or no claim) to Property :	<ol style="list-style-type: none"> 1. Can not acquire property. 2. Can not bargain for wages. (It is determined by custom). 3. Can not see money (Allowance are in grain usually). 4. 'Land' : <u>Kamia</u> has no occupancy rights in it. He usually share half produce with his master.

Sources : 1. Report on Survey and Settlement Operations, relevant districts; (2) W.W. Hunter; Statistical Account of Bengal, relevant volumes; (3) Grierson. Notes on the Districts of Gaya, (1839); (4) Sterenson-Moore, Report on the Material Conditions of Small Agriculturists and Labourers of Gaya, ; (5) Report on the Royal Commission on Agriculture in India, (1928); (6) P. Nolan, Enquiry on the condition of the poorer classes 30 June, 1888. (7) Letter dated 12 September, 1919, No.7596/A-25R, Revenue Department, Proceeding volume, October 1919, Government of Bihar and Orissa, ; (8) Letter dated 15 October, 1889, Bhagalpur Commissioner Records, basta 887-88.

Finley's analysis was based on the slave societies of Europe and Near East. Naturally he stressed on the decisive role of the social status in the analysis. Our context is the colonial North Bihar where the market relations have already penetrated in this society. At the same time, at the village level, the traditional elements like caste hierarchy, customs and tradition have persisted.

The Kamiauti agreement put severe restrictions on the Kamia's movement. Sohan Bhuinyan and Soman Rajwar agreed to do all the work of kamia and also agricultural work. The agricultural worker had his freedom once the fieldwork was over. But for these kamias, they had other jobs to do after the field work at his master's home and Khalihan was completed.³⁸ The musahar Kamia of the Monghyr district had these conditions clearly written in his agreement:³⁹

"The A.B. binds himself to continue in the service of his master, C.D. and never to refuse doing any work imposed on him, morning and evening, day and night. He will be present and ready to work and he will never absent himself even for a visit to a friend or relation without visit".

The Kamia thus did not have freedom of his movement. He could not go to work for others without his master permission; he could not leave his village to meet his relatives without permission; he had to work whole day; all the time (Table 8.7; item I). In Patna,⁴⁰ Gaya,⁴¹ Shahabad,⁴² in almost everywhere, these were the conditions of Kamiauti agreement, written or oral.

Conditions for leave were usually written in the agreement : Somar Rajwar of Gaya, for example, agreed to put his son in the service of his master if he happened to go out on leave for a day or two. During his absence his master was given all the authority to make his son work for him in the manner he wanted.⁴³ In the case of A.B. musahar, the agreement was that if he was absent, his day's work would accumulate and he would be "liable for such damages as his Majesty's Court of Law may direct."⁴⁴

38. See Final Report on the Survey and Settlement Operations the District of Gaya (1911-1918).

39. Final Report On the Survey and Settlement in the District of Gaya.

40. Letters dated 12 September, 1919, from J.A. Hubbuk, Secretary to Government to the Secretary to the Government of India, No.7506/S-25R, Revenue Department, Government of Bihar and Orissa, Proceeding Vol 828, October, 1919, Patna, pp. 2 and 3.

41. O'Malley, Gaya District Gazetteer, p.153.

42. L.S.S. O'Malley, Shahabad District Gazetteer, p.89; also, see letter dated 2nd June, 1888, from John Boxwell, Officiating Commissioner of the Patna Division to the Secretary to the Government of Bengal, Revenue Department; in P. Nolan, Enquiry into the condition of the poorer classes.

43. Final Report On the Survey and Settlement Operations in the District of Gaya.

44. Final Report on the Survey and Settlement Operation in the District of Gaya.

Absconding, desertion and migration, without permission could lead to severe retribution from the master, if he could lay his hands upon the Kamia (Item III Table 8.7). At the time of the Kaminuti agreements, the agricultural labourers had to assent to the penalty provisions. Sohan Bhuinyan, for example, put thump signature on his own punishment in these terms.⁴⁵

"If at any time I abscond I shall be liable to be brought back by the said Jainu Singh by force and shall offer no objection".

In one case it was agreed that the defaulting Kamia would be punished by overwhelming interest on the agreed loan.⁴⁶ In Purnea, the absconding meant that the Kamia had to pay interest on the entire loan amount, or had to work for two days without any allowances.⁴⁷ According to one Kamiauti agreement bond bought to the Patna Court, the Kamia had to pay higher rates of interest - one anna in this case - for absent without permission.⁴⁸ The interest thus became the binding clause in the Kamiauti agreement (Table 8.7 No. III).

The Kamiauti agreements were practically hereditary. In some cases it was explicitly written in the agreement, as in case of Sohan Bhuinyan.⁴⁹ and Somar Rajwar.⁵⁰ Babu Dhanpat Singh, Somar's master, was given free hand to realise the money with interest from any of his property that he (Dhanpat Singh) could lay his hand on. Neither Somar Rajwar nor his descendent had any right to oppose.⁵¹

In cases where it was not explicitly written as hereditary, the Kamiauti agreement had tendencies to become hereditary. This was reported to be particularly so in the Patna Division: The conditions were such, J.A. Hubback wrote quoting other officers, that the repayment was difficult and the status tended to be hereditary.⁵² The social attitudes also contributed to their continuation. No son would normally refuse to pay fathers debt. It

45. Final Report on the Survey and Settlement Operation in the District of Gaya.

46. Letter dated 12th September 1919, from J.A. Hubback, Secretary to Government to the Secretary to the Government of India, Department of Revenue and Agriculture No.7596/S-25R Revenue Department, Government of Bihar and Orissa, Proceeding Volumes 828, October, 1919.

47. Letter dated 12th September 1919, Proceedings Vol.828, October, 1919.

48. Letter dated 12th September 1919, Proceedings Vol.828, October, 1919.

49. Final Report on the Survey and Settlement Operations in the District of Gaya (1911-1918).

50. Letter dated 12 September, 1919, Proceedings Vol. 828, October, 1919.

51. Letter dated 12 September, 1919, Proceedings Vol. 828, October, 1919.

52. Letter dated 12 September, 1919, from J.A. Hubback to Secretary to Government, to the Secretary to the Government of India, Department of Revenue and Agriculture, No.7596/S-25R, Government of Bihar and Orissa, Revenue Department, Proceeding Vol 828, October, 1919.

is socially bad. Then the Hindu law made it incumbent on a son to satisfy debts incurred by father. For the Kamias son this meant renewal of bondage.⁵³ Further, when the kamia's son needed money whether for food, etc or for social function, he could get it only from his father's master with whom his (Kamia's) family usually had long relations. He had no land or other assets to get loan from others. Neither do the other cultivators would easily oblige him by offering him (the Kamia's son) the debt, lest it might annoy the cultivators to whom his father worked as Kamia. The result was that he went to his father's master for loan, wrote bond and worked as Kamia.

Further the continuation of bondage was ensured by certain other factors inherent in the relationship between the Kamia and his master. No cultivators wanted the repayment of loans. No interest was charged normally though there were exceptions to this. In Champaran, for example, the compound interest was charged on the loan even when the Kamia was working with the master.⁵⁴ In other area it was presumed that the Kamia worked to pay the interest and the allowance given to him were meant for his survival. The question of interest came when the kamia asked to be released. The other occasion in which the interest and its repayment was considered was when the master wanted to penalise the Kamia for one reason or the other. The Collector of Monghyr, Mr Lockwood, put the reality succinctly.

"It is said that not only are the bonds never liquidated, but that the bond holder would refuse to accept the money if tendered; and, so far I can learn, the simple clown gets so confused regarding what is due in shape of compound interest, that it never enters his head to liquidate his debt."⁵⁵

Sohan Bhuinyan and Somar Rajwar⁵⁶ provided illustration for another form of control : the exorbitant quit money. Sohan Bhuinyan, for example, agreed to pay nakdi and bhaoli produce of one plough and Rs.100 (against Rs.24-14 anas loan) if he had refused to return to his master after desertion or offered resistance to that effect. Somar Rajwar, the other Kamia, agreed to pay interest if and when he decided to quit : "If I happen to go away elsewhere I shall pay to the said Babu Dhanpat Singh interest of one anna per rupees per month until the aforesaid loan is paid off".⁵⁷

53. Letter dated 12 September, 1919, Proceedings Vol 828, October 1919.

54. Letter dated 12 September, 1919, Proceedings Vol.828, October 1919.

55. See Hunter (1877, XV : 113).

56. Final Report on the Survey and Settlement Operation in the District of Gaya, (1911-1918).

57. Final Report on the Survey and Settlement Operation in the District of Gaya, Appendix (II).

The other procedure to make repayment difficult was by making it compulsory for the Kamia to pay the loan amount in lump and at a particular date. Usually the date was the month of Jeth (May-June) of a ⁵⁸ particular year. Somar Rajwar's agreement, for example, mentioned Jeth of 1916 as the date of repayment. This was the traditional month for the beginning of all agricultural operation in North Bihar; and it was also the leanest month for everybody which made the procurement of the quit money extremely difficult. Invariably, unable to raise his quit money, the Kamia would request for renewal of the bond which the cultivator would readily agree. It also enabled the cultivator to make the contract yearly and thus maintained its legal validity. The district officials from Purnea provided evidence of the existence of such methods of continuation of Kamias bond in his district.⁵⁹

"A definite date for repayment is named and, in this district, as in Gaya, a labourer can theoretically free himself by repayment of loan. Actually of course he does not do so; the date given in the bond is merely to avoid the debt being barred by limitation and in most cases the debt is renewed".

The social practices, customs and traditions were also weighted against the Kamia. In some parts of Bihar it was thought incumbent on son to repay father's debt.⁶⁰ The Kamia's son obeyed the norm. In Beliaha sub-division, the cultivators often evoked the provision of the Hindu law that son must repay father's debt to take the Kamias son to criminal courts whenever he refused to pay his father debt.⁶¹

The deserting Kamia had to face popular rejection also. Public opinion in the Patna district discouraged desertions: "He who takes loan, but subsequently deserts is, bad character".⁶² Then the desertions did not mean freedom from bondage. In Gaya, for example, the custom was that the first ryots who had given food to the fleeing Kamia would take the later under his bondage. If the former master found out the deserter, he could either take loan from the new master to pay the loan of the former master or his old master can pay the Kamia's new master and took back his old Kamia. In either case the kamia remained bonded.⁶³

58. Final Report on the Survey and Settlement Operation in the District of Gaya, Appendix (I).

59. Letter dated 12 September, 1919, from J.A. Hubbak, Secretary to Government to the Secretary to the Government of India, Department of Revenue and Agriculture; Proceedings Vol 828; October 1919.

60. Martin (1838: 307).

61. Letter dated 12 September, 1919, Proceedings Vol.828; October 1919.

62. Final Report on the Survey and Settlement of Patna District.

63. Final Report on the Survey and Settlement Operation on the District of Gaya.

No official or private account of revolts or mass desertion or migration by the Kamias could be found. In fact, the only evidence of the Kamia's opposition and its form can be inferred from the punishment provision in the Kamiauli agreement reported by the officials: "The opposition of the kamias is normally in the form of refraction, negligence of work and flight". One such instances was given by the district magistrate of Shahabad: "The usual allowance of grain given daily is never cut, even though the Kamia is refractory. He is then punished by personal chasatisement."⁶⁴

The refractor Kamia was seldom punished for his refraction as his employer-cultivator was scared that the former might take to flight. On the other hand, the Kamia seldom actually left his masters as they hardly had any place to go. The Kamias almost always refused the urgings of the British officials to migrate. The Collector of Monghyr reported in 1870s that whenever he had asked the low caste Kamias to migrate they replied that their master would not allow them to do so.⁶⁵ In 1919, in the Patna district the father of a Kamia enlisted as artillery driver, induced his father to write to the Lt. Governor to discharge him (the Kamia) on the false ground that he is a minor.⁶⁶

Conclusion of this chapter can thus be summarised. First, the Kamia's were employed by mainly the upper caste cultivators, for (a) their social taboo in touching the plough and (b) for assured and timely labour supply. Second, the Kamias were mainly the former landless agricultural labour class. In some cases they were also former artisans and under-raiyats. Third, usually, therefore, they were from the same castes as that of the agricultural labourers, artisans and under-raiyats. In some cases they were also from primitive castes and tribes. Fourth, these classes became Kamias because of the uncertainties of jobs in agriculture. Fifth, the Kamias wage was lower than that of the agricultural labour; it was in grain; and in coarse grain. The Kamias did all kinds work, in all hours of the day, and every day of the year. Sixth, the origin of Kamias unfreedom was loan. The necessity for loan arose usually either to meet the expenses of the daily needs or marriage expenses or to pay off past loan. Seventh, no interest was normally charged on the loan. It was, however, invariably presumed that the Kamia's work to pay

64. Letter dated 2nd June, 1888, from John Boxwell, Officiating Commissioner of Patna Division to the Secretary to the Government of Bengal, Revenue Department, in P. Nolan, Enquiry into the condition of the poorer classes.

65. Hunter (1877, XV : 113).

66. Letter dated 12 September, 1919; Proceedings Vol.828, p.3.

the interest, the wage paid to them was for their survival. Eighth, the question of interest came only when it was necessary to punish the Kamia or to prevent him to earn his release. Ninth, the other ways to prevent kamia's from earning their freedom was to fix inflated quit money and to fix only one date of release. Tenth, the Kamlauti agreement could be written or oral. Both were illegal. Despite this it survived due to a) economic necessity and (b) social customs, tradition and practices. Eleventh, the social attitude to work, to debt (that son must pay father debt), to Kamia, who fled his master, Hindu law, the caste hierarchy etc. tended to support and perpetuate the Kamlauti system. Twelfth, no effective opposition to their unfreedom came from the Kamias at least during the colonial period, except in the form of indolence and inefficiency.

Chapter IX

THE CASUAL LABOUR OR MAJUR

The casual labourer or majur¹ is the last of the five categories of agricultural labourers that we have taken up for study. They are usually employed for one agricultural operation; e.g., for harvesting or for irrigating the fields. But they can be appointed for a day or two also for various other agricultural work, for example, for bundh repairing work or as replacement to a sick ploughmen or a weeder etc.

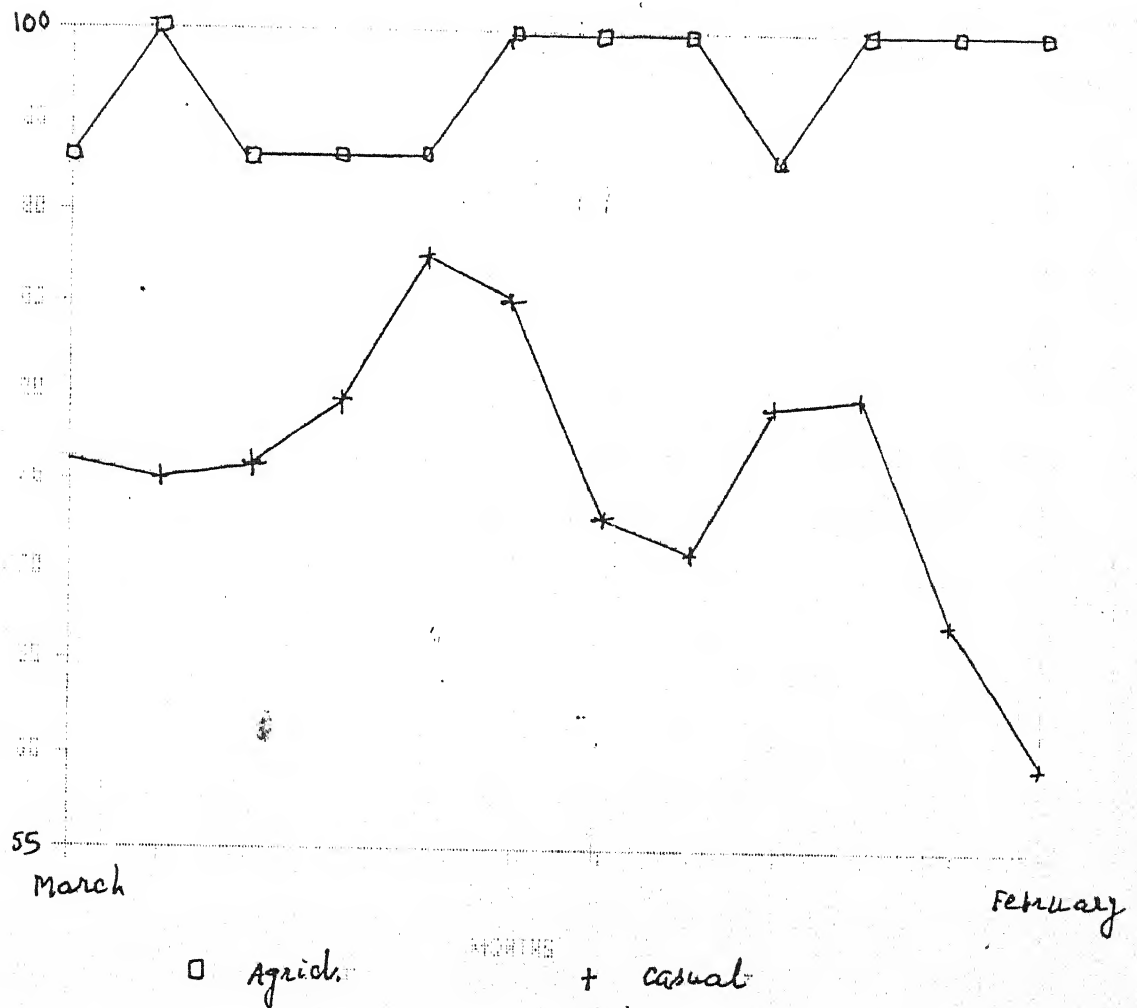
The internal migration is a striking feature of these labourers in North Bihar.² This migration were caused by : (1) A drought or a famine, which might prompt labourers to move to a nearby urban centres or other unaffected areas for relief and succour; (2) by opportunities for jobs and higher wages at a particular area at a particular agricultural season.

The timing and direction of internal migration depended on the cycles of monsoon. This demand for agricultural labour, with its fluctuations, has been picturised next page :

The information for this picture has been taken from Agricultural labour Enquiry Committee Report³ which gives information for 1950-51 - period which falls outside our reference period, but not irrelevant for that reason as broad indicator. The picture shows two things clearly: (1) The attached labourers were employed for longer period and their job situation was less fluctuating than the casual majur; (2) The jobs of the later was more fluctuating. It had two highs: one in July - August and the other in November - December; the first high was higher than the second. The period between August and November were the slack periods.

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1. Generally 'majur' meant casual labour in North Bihar. But the term varied from region to region: it was 'jan' in south east Bihar; majur in Tirhut; banihar in Shahabad and other places; kamariya (he who wears a blanket in waist) in East Tirhut; Kamiyan in Patna, Gaya and South Monghyr; roja in South East Tirhut; etc. see Grierson, (1975 :313-314)
 2. The official literature is full of discussions on migration. See, for example, Royal Commission on Agriculture, Vol. III, Evidence volume on Bihar, Calcutta. 1928; Bihar District Gazeteers of Hunter
 3. Agricultural Labour Enquiry Report on Intensive Survey of Agricultural Labour. 1955, Vol.3, Table 3; p.51.

Employment of Casual Labour



9.1 Pattern of migration

In the agricultural slack season which roughly falls between August to October the main demand for labour came from public works departments, either directly from the Government or indirectly through the contractors. For the works like digging canals, strengthening of bridges etc, the demand was high for such castes as Nunia and Beldar, and in some places, Bind, because of their traditional skill. The tribals were also preferred. The sights of tribal groups trudging their way from Chotanagpur to North Bihar was a common sight in North Bihar during this period. From some North Bihar districts the labourer went to distant South Bihar district of Palamau.⁴ The people also would come to Shahabad for work in the Son canal (Hunter, 1877, XII : 186). The labourers from neighbouring United Province would also visit North Bihar during the period.

The main migration season, however, was November and reached its peak in December. And the class involved in the seasonal migration were primarily the casual labour. This was the Aghani crop harvesting season. The season ended in March-April, at the beginning of the hot season when the labourers returned to their home with their share of crop.

The specific timing and direction of this migration varied from region to region. From Saran the labourers used to start moving at the end of the Durga Puja (the worship of Goddess Durga) and continued till the end of December (Hunter, 1877, XI : 269). They travelled through Muzaffarpur and Darbhanga to the Northern Districts of Bengal and returned home in the month of March-April.

From Shahabad and Patna the migration followed the same pattern:⁵ they used to set out at the beginning of cold season, working in road constructions, and in the railways initially and then in the fields harvesting crops, returning home before the start of the monsoon i.e. by June. Nunia⁶ from Gorakhpur, in the neighbouring United Province, came to Champaran for work in December - January.

4. See, for example, Census 1921, Vol. VII, Bihar and Orissa, Part I, Report by P.C. Tallant; Also, Malley's, Bihar and Orissa District Gazetteers: Shahabad, p.88; and Hunter, (877, XI : 269).

5. See on this O'Malley's, Shahabad District Gazetteer and Patna District Gazetteers.

6 Nunias are artisanal castes. They are maker of salt-petre, Hunter (1877, XII : 239).

The labourers came to Bhagalpur from the rabi tract in October-November for Aghani paddy harvesting (Hunter, 1877, XIV : 53). They would go back in the month of March-April to the rabi tract again for harvesting.

In Monghyr the harvesting season were seasons of great internal movement (Hunter, 1877, XV : 54). In December, the people from rabi tract in North of the Ganges crossed over to cut the rice in parganas like Maldah, Birahazari, Jamul and Kharagpur, returning in the following months with their share of crop. When the rabi crops of pargana Pharkiya, Bhusari and Naipur ripen in April, the labourers from southern Monghyr came crossing the river for harvesting.

The collector of Purnea reported the movement of mass of labourers from the western districts of Tirhut, Chapra and Gazipur passing through Purnea to Bengal in October and returning back home before the onset of the rains. In 1873 the Purnea collector met one such group of kahar labourers going to East Bengal in search of jobs (Hunter, 1877 : XV). The collector of Tirhut also reported similar passage of labourers through Saran in October to December to the east, to Purnea, and also about their return in the next spring.⁷

Seasonal job shortages at home and the lure of jobs in the neighbouring land, particularly income in kind, were the pushes and pulls that encouraged these landless labourers to migrate. Satinath Bhaduri brought out the complex interplay of these two factors in the case of female labours of Purnea thus (Bhaduri, 1388 : 98):

"In the month of Kartik (October-November) and Aghan (November-December) the income of the male members of the Tantiwa⁸ becomes somewhat uncertain. The work of gharami (thatching) becomes less yet the work of clearing the well do not start till then. Because of this perhaps, the females of Tantiwa go out for rice cutting in Aghan. They return towards the end of Pus. Most of them goes to the east into Malsi Jamaur, and Rutwa thana. Income in these areas are more; So what! "Water is bad"; "then there is Malaria". It is because of this most of the time the women folks of Tantiwa goes to such places as Kamaldaha, Badhadi, Dhokardaha in the west. In these areas the water is good. But the demand for labour is less in the west; so thousands and thousand of male and female labour of Monghyr and Bhagalpur, comes to this side (Purnea) during the (rice) cutting period; by crossing the Ganges and the Kosi".

Thus the specialised jobs for the castes were seasonal. It did not provide all time work rendering menfolks un-employed and forcing the womenfolks to look out for

7. The Collector even talked about the plan for developing a road system to facilitate the movement. See Hunter (1877 : XIII).

8. Tantiwa is weaver sub-caste of Bihar; see Risley, (1891, Vol I : 295).

jobs. The harvest season provided such opportunities; so they migrated often en masse.

This migration was basically from areas of lean agricultural period to the areas of harvesting. In the period between October-December its direction was towards the east to the harvesting of Aghani paddy; and also perhaps to the tea gardens of East Bengal. The journey back home to the west would begin in spring. They would come back to cut the rabi crops. In the slack period between mid-August to October there used to be a mini-migration of landless to the urban centres and areas of railway construction, public works, and works of irrigation canals. The pulls were usually higher wages. The labourers travelled with their entire family of men, women and children. For the women of the labouring classes this was the best opportunity to earn their annual keep.⁹

9.2 Growth of the agricultural labour

These labourers were mostly landless though it also included dispossessed artisanal castes like Nunia, Kahar, and the like. It was very difficult to quantify the number of these landless agricultural labourers and their growth. The official documents and administrative reports had made no systematic effort to quantify their number and their growth or otherwise. Only sustained source of information is the Census but that too from 1871-72 onwards. The Census, however, poses a number of problems.

In the fifties Patel (Patel, 1952 : 149-150) made a detailed study of the growth of the agricultural labour in India and Pakistan on the basis of the census data. The thrust of Patel's argument was this: (1) At the apex of the rural society was the 4 million propertied rentier class. At the base was 42 million landless labourers, including 3 million bonded labour. In between existed 37 million petty proprietors and tenants at will, each cultivating 5 acres of land or less and 28 million middling tenants tilling 5 acres or thereabout on an average. (2) The number of landless agricultural labourers were increasing rapidly. (3) The growth of this class was associated with disintegration of traditional institutions, rapid dispossession of peasantry and high concentration of land. (4) This development was uneven and were signs of arrested capitalist development.

9. Almost all District Gazateers give details about this internal migration. We have given specific reference of them as and when it was necessary. For one interesting account of this migration, see Harrison, (1890: 274-303). For a vivid description of the life styles of the migrant labourers in Purnea region, see Bhaduri (1388 Bengali year :90-105).

This pioneering work of Patels work has, however, two shortcomings: (1) His work does not take full cognisance of the problems of using census data which form the main basis of his work (Krishnamurthy, 1972). (2) The other is his theoretical approach. The development of capitalist relation in a colonised society may quite be possible along with the strengthening of traditional institutions. The growth of agricultural labour in these societies may be associated with further strengthening of bondages etc. Patel's ¹⁰ theoretical framework does not provide for this complex pattern of change in a colonised society.

On the other spectrum of this discussion stands Dharma Kumar (1965). Approaching the problems of quantification from the point of view of castes and caste occupation, Kumar (1965) criticised the nationalists and Marxists on two counts mainly: (1) They overemphasised the growth of agricultural labourers during the British period. This class, she said, existed even in the pre-colonial days. (2) They also overemphasised the fact that large bodies of peasant proprietors and artisans were dispossessed during the British days and became landless.¹¹

On Kumar's first point that the agricultural labourer existed even in the pre-colonial period, Bhattacharya (1776 : 86) pointed out that this viewpoint was the result of confusion of categories. The presence of agricultural labour, Bhattacharya argued, that Kumar found in the British documents in the pre-colonial and early British period was the result of the caste system and the Hindu upper caste domination. The landlessness created due to commercialisation and spread of capitalist relation is a different category altogether.

10. To be sure it needs to be noted here that Patel's argument is comprehensive enough to point out (1) that the growth of agricultural labour co-existed with dwarf-holding and various forms of bondage; (2) that the growth of agricultural labour under this situation, while signifying rapid destruction of pre-capitalist relations, showed arrested growth of capitalist relation. Our objection is that Patel implicitly assumed a linear trend of development. He fails to point out that the colonial state is unwilling, as also unable, to displace totally the pre-capitalist relations in the colonies as it did in their own country. They tended, on the other hand, to modify and maintain them as it suited their surplus appropriation from the colonised country. See Patel (1952 :145,147-153) For the role of colonial state in appropriation of surplus from the colony, see Bagchi (1982 :21-31).

11. It might be noted here that Dharma Kumar's work found enthusiastic support from a section of foreign historians and their counterpart in India, who sought to rewrite the history of India during the British period sans colonialism in the name of reinterpreting the Indian history. For an understanding of the thrust of this new historiography as also its critique, see, among others, The Indian Economic and Social History Review, Vol. V, No.1, March 1968 and also Social Scientist Vol.12, No.12, December, 1984.

Kumar's second point about the dispossession of peasantry and artisan has been convincingly refuted by scholars like Bagchi (1976 : 1976a) and others. Neeladri Bhattacharya (1985) has also shown logical inconsistencies in Kumar's argument on this point from her (Kumar's) own work.

We have presented the census data on agricultural labour of North Bihar in two tables: (1) The Table 9.1 shows the growth of number of male and female agricultural labour separately from 1881 upto 1931 and (2) the Table 9.2 gives the percentage of growth of male agricultural labour of North Bihar in relation to total population.

These tables have been adjusted in order to obviate some of the limitations of the census data. In the initial censuses the coverage of the census operation itself created problem. The 1871-72 census covered British India only. It did not cover the native states. In our table, therefore, we have dropped 1871-72.

The economic classification of 'worker' also raises some difficulties. In 1881 only one question was asked to the worker about his work and his answer was recorded. The purpose was to know their occupation only. In 1891 the purpose was to find out supporting powers of each occupation and, therefore, the means of subsistence of the whole population was taken into account while collecting census data.¹² In 1901 there was switch again to the 'actual worker.' In 1901, however, as compared to 1881, the 'actual worker' was distinguished from 'dependents' and not only the subsidiary occupation of the actual worker but also the means of subsistence of the 'dependents' was collected. In 1911 and 1921, by and large, the same method of classification was followed with only minor modifications in details in 1921.¹³

The 1931 census classification¹⁴ was again modified substantially. The worker was divided into earner and working dependents but no attempt was made to record the means of subsistence of working dependents. This added further to the already existing problem of how to draw the demarcating line between 'actual workers', 'working dependents' and 'dependents' (Thorner, 1962 : 157). Because of these difficulties we dropped 1891 from our analysis and have taken only the actual worker for the census years of 1881, 1901, 1911, 1921 and 1931. For 1931 we have added 'earner' and 'working

12. Census, 1891, General Report, J.A. Baines; p.88.

13. Census, 1921, Report, Vol. I, Part I, Chapter XII; p.236.

14. Census, 1931, Report (W.G. Lacey), Vol. VII, Part-I; p.179.

15. Census 1931; p.186.

dependent' in order to make the figures for actual workers comparable with the preceding censuses.¹⁵

The information on female population in the censuses creates another almost intractable problem. As it is, it was difficult to distinguish between 'actual workers' and 'dependents' in any family in the rural society of North Bihar in the nineteenth and early twentieth century when division of labour were not very marked. It was all the more so in case of the female population. J. A. Bourdillon commented that in the 1881 census the occupation pattern of female was most unsatisfactory for a number of reasons: (1) The instructions to enumerators were vague; (2) often the occupation of male was entered as the occupation of female; (3) the female servants engaged in household works were entered as domestic servants. For the analysis of female occupation, said Bourdillon,¹⁶ it was difficult to know how many of them were housewives and how many were real workers. Further, according to Bourdillon, the female population included in general labour in all probability were those who were actual worker.

In 1911 E.A. Gait pointed out that the female population for 'actual workers' and 'dependents' were not more than an approximation to the truth. It was difficult to say, Gait added, when a female weaver should be treated as housewife or a worker. The female participation in work was affected by caste, religion and even the nature of agricultural operation.¹⁷ In transplanting and weeding, for example, the female labour was preferred. In many areas, and particularly among the upper castes, it was socially derogatory for women to work. This affected the attitude of the informant. In such areas and among such castes, there was tendency to report female workers as 'dependents'.

In 1931 again, the rise in the number of female domestic servants were the contribution of the enumerator's confusion rather the changes in real occupation pattern. It was always socially respectable, said, J. H. Hutton, the census commissioner, to show one's own wife as engaged in domestic work rather than in the field.¹⁸ This more than anything else inflated the number of female dependents.

16. J.A. Bourdillon, *Census of Bengal, 1881, Vol. I, Calcutta, (1883)*, p.184.

17. In harvesting and transplanting the female participation was high, particularly among the lower castes. In threshing job which was usually carried on in the Khalian (courtyard) even the females of upper castes participated, particularly among the poor.

18. *Census, 1931, vol. I; p.274; (1984 reprint)*.

In this study these problems have been solved by presenting the figures for male and female agricultural labour separately and using only the male agricultural labour population in proportion to total male agricultural population to reflect on the extent of growth of agricultural labour in the period under review.

In any calculation of agricultural labour the category 'general labour' can not be ignored. These two categories — labour and general labour — are, in fact, not entirely exclusive. It all depended on the timing of the census operation. The same labour could be recorded as field labour if the census was taken in the month May-June and as an agricultural labour if it was in July-August, resulting in the substantial transfer of number from one category to the other. These two categories, J. J. Martin commented in 1921, should always be colated.¹⁹

The category 'general labour', however, has other related problems. The scope and definition of this category have been changed frequently from one census to another. In fact, any class/occupation which cannot otherwise be identified and classified into any specified census category has been put into this category resulting in the frequent changes in its number through census redefinition alone. For example, the coolies which were put into 'unspecified labour' in 1891 was shifted to farm labour in 1901.²⁰ In Bihar the number of field labourers dropped in 1911 as because a large number of them were recorded as 'unspecified labour' ²¹ which were treated as farm labour in 1901.

This problem has been solved here by adding 80 percent of the general labour (or unspecified labour) to the category of agricultural labour in each census in our tables on a pro-rata basis.²² This other 20 per cent has been assumed as urban labour. This estimate has been made after taking into account the ratio of those dependent on agriculture and the total population in North Bihar in the four censuses from 1901 to 1931.

With so many constraints in the data it is extremely difficult to say anything definitely from Table 9.1 and 9.2 except certain broad indicative trend. These are noted in the next page :

19. Census, 1921, Vol. I, Part I, Chapter XII; p.246.

20. Census, 1901, Report, Vol.I,p.192.

21. Census, 1901, Report, Vol.I, p. 413.

22. Krishnamurthy has added the entire 'general labour' to the agricultural labour. (Krishnamurthy, 1972:331). Bhattacharya takes 75 percent for Punjab (Bhattacharya 1985 :131).

Table 9.1
Agricultural Labourers of North Bihar
(in thousands)

	Male					Female				
	1881	1901	1911	1921	1931	1881	1901	1911	1921	1931
Patna Division										
Patna	136	83	107	98	112	185	77	120	89	97
Gaya	157	148	156	128	159	151	158	204	100	157
Shahabad	142	109	110	94	130	162	159	149	120	148
Tirhut Division										
Saran	63	51	50	37	57	94	106	99	55	72
Champan	86	127	132	112	139	57	102	125	97	108
Muzaffarpur	109	144	185	167	236	47	57	85	84	125
Darbhanga	120	176	207	194	232	49	137	114	108	107
Bhagalpur Division										
Monghyr	143	131	168	144	168	133	89	198	139	135
Bhagalpur	122	127	186	164	189	100	102	185	178	163
Purnea	130	152	185	137	212	65	67	102	80	91
North Bihar	1214	1253	1491	1280	1639	1047	1064	1386	1089	1028
Bihar (including Chota Nagpur estate)	1456	1510	3609	1483	1829	1237	1384	1814	1471	1834

Sources : Census, 1881, Vol II; Census, 1901, Vol A, part II; Census, 1911, Vol V, part III; Census, 1921, Vol VII; Census, 1931, Vol III, part II.

Table 9.2
Agricultural Labour Force in North Bihar in relation to total Agricultural Labour
(Percentage)

	Male			
	1901	1911	1921	1931
Patna Division				
Patna	26.9	28.4	24.9	27.3
Gaya	32.5	25.6	25.0	29.9
Shahabad	23.8	36.3	21.2	27.9
Tirhut Division				
Saran	8.7	9.1	5.9	8.8
Champan	23.5	24.1	19.3	22.4
Muzaffarpur	21.5	24.9	22.3	31.1
Darbhanga	22.1	29.8	24.7	29.4
Bhagalpur Division				
Monghyr	27.0	32.9	29.2	30.7
Bhagalpur	25.9	34.7	29.7	35.4
Purnea	27.4	35.1	25.1	39.4
North Bihar	23.3	27.2	22.4	28.0
Bihar (including Chota Nagpur Estate)	10.4	27.0	20.2	25.0

Note : We have excluded in the table the 1881 figure because of certain difficulties in comparison. See text for this.

Sources : As in table 1

(1) The proportion of agricultural labour has surely gone up between 1901 and 1931. This is evident from the two table (Table 9.1, and 9.2).

(2) The actual growth of agricultural labour in thousands, both male and female, shows similar trend: their number increases in North Bihar as well as in the whole of Bihar (Table 9.1).

(3) The percentage of male agricultural labour force to total agricultural labour in North Bihar also shows rise (Table 9.2). The rising trend is more pronounced when we take the region of North Bihar and the province of Bihar as a whole (Table 9.2).

(4) In terms of region the district of Patna, Shahabad and Saran show fall in both male and female agricultural labour population (Table 9.1). The other districts of North Bihar shows rise in both male and female. As a percentage to total agricultural labour force, however, the male agricultural labour rises in all the districts between 1901 to 1931, except in Gaya and Champaran (Table 9.2).

Whether this growth of agricultural labour indicates increasing differentiation of the peasantry of North Bihar and rise of capitalist relation in agriculture can not, however, be deduced from the information though it probably adduce to increasing landlessness and pauperisation.

9.3 Caste and social origin of the casual labour

Dharma Kumar tried to study the extent of growth of this new class of agricultural labour by using caste-occupation relationship. She, however, confused caste relation with class which are two distinct categories. It should be noted that this confusion affected the census also. The collection of material on caste by the census superintendent was at the urgings of the British colonial state which wanted to grasp this specific feature of social relationship in India. In their attempt, however, they overlooked the most important aspect of the structure of caste relationship in the Indian society — their evolutionary character — and interpreted it in rigid terms. The caste data in the census did not remain unaffected by this retrograde effect (Bandopadhyay, 1985).

Variations of castes of North Bihar and their occupation have been presented in the Table 9.3.

Table 9.3
Social Origin of Agricultural Labour
(Actual Worker: Percent)

Item	Agricultural Labour			Unspecified Labour		
	1901	1911	1921	1901	1911	1921
<u>Male</u>						
Landowning Caste	2.6	1.7	.63	1.1	1.3	1.5
Cultivating Caste	4.8	14.1	9.1	1.7	1.3	5.0
Artisanal Caste	9.1	25.1	16.8	8.3	2.2	2.2
Labouring Caste	21.8	4.5	6.35	4.7	1.5	1.5
<u>Female</u>						
Landowning Caste	4.7	7.2	2.7	1.1	3.4	2.7
Cultivating Caste	8.5	25.8	29.0	3.1	1.9	27.3
Agricultural Caste	11.3	44.8	28.7	10.0	2.9	16.8
Labouring Caste	28.6	3.9	8.5	4.5	2.8	1.7

Note : See text for explanation of the items.

Source : Census tables on caste and occupation from relevant census.

Table 9.3 suffers from certain serious limitations: First, the data is by no means exhaustive. It cannot be compared with the three census tables quoted earlier. Second, the decennial comparison of growth of agricultural labours and unspecified labours is also not possible as the coverage of castes in the census operation from one decade to another has varied significantly. The coverage, in fact, has become increasingly less.²³

Third, the social attitude of the informants towards castes and their rigidities also seriously undermined the effectiveness of these information on caste and occupation. Thus if the informant was an upper caste Brahmin and if he was not a landlord, he would invariably record priesthood as his principal occupation. If he was, on the other land, a landlord, he would invariably record cultivation as his principal occupation and

23. The coverage is not uniform: In 1901, the landowning caste includes 5 castes; the cultivating caste, 9; the artisanal caste, 19 and the labouring caste, 7, in 1911 and 1921 the coverage is more or less the same. In 1911 the landowning caste includes 5 castes; the cultivating caste, 11; the artisanal caste, 18, and the labouring castes, 5. In 1921 the corresponding number of castes are 4, 5, 10 and 2, and in 1931 only the landowning castes and artisanal castes were covered in the census. In 1931 the number of castes covered in landowning caste is 2 and the artisanal caste, 2.

priesthood as his secondary occupation. A cultivating Mallah would assert in the census that he was a boatman and a Koiri landless agricultural labourer would say cultivation as his profession.²⁴

Only a few comments can be made out of these observations: First, a not insignificant proportion of the cultivating, artisanal and labouring castes joined the ranks of agricultural and other unspecified labour (Table 9.3). Second, this tendency was less marked for the female population, which could of course be for reasons of inaccurate census enumeration. Third, the tendency toward 'depeasantisation' could be observed even in case of the landowning castes. The 1931 Census Report on Bihar indicated this tendency among the upper castes like Brahman and Kayastha of Bihar as the following Table 9.4 shows :

Table 9.4
Upper Caste in Manual Work (Nos.)

	Brahman		Kayastha	
	1921	1931	1921	1931
1. Farm Labour, Wood Cutter etc.	4,470	16,166	716	1749
2. Labourers	1,312	2,077	13	119
3. Artisans etc.	3,024	3,204	367	410
4. Labour, Boat men etc.	899	1,714	105	127
5. Unspecified Labour	3,793	3,820	318	749

Source : Census 1931, Vol. VII, Part I, p. 192.

This tendency towards 'depeasantisation' and also 'pauperisation' is certainly more marked among the artisanal and labouring castes. This was best evident at the time of the natural crisis like draught or famine. The Famine Reports were replete with observations that the landless classes were the first category of people to migrate and/or flock at the relief camps at the slightest hint of the imminent famine. The Table 9.5 prepared from various famine reports well illustrate this point :

24. This observation of the census commissioner was quoted in Report on the Survey and Settlement of Muzaffarpur District, 1892-1899, 1961; p.25.

Table 9.5
Social Origin of Artisans and Labourers
Affected by Famine

Year of Famine/ Famine Report	District	Castes Affected		
		Cultivating Caste	Artisanal Caste	Labouring Caste
1866	Tirhut	Ahir, Kurmi	Nunia, Dom	Dosadh
1988	N.A.	—	Lohar, Banla	—
	Bhagalpur	Dhanuk	Jolaha	Musahar
	Muzaffarpur	Kahar	Nunia, Jolaha	Musahar
1896-97	Darbhanga			Musahar
	Shahabad	Ahir	Chamar	Dosadh
			Chamar	Kharwar Dhanggar
1898	Saran Shahabad		Chamar, Jolaha Jolaha, Lohar, Napit, Hajjam, Mochi.	Dosadh

Note : In cases where the famine year is not specifically given in the report, we have given the year of the famine report.

Source : Relevant famine reports on Bihar.

Table 9.5 shows that the crisis like famine identifies more clearly the agricultural labour class and their castes. The dominant among them are the artisans who were dispossessed of their caste jobs and also the tribes and lower castes who are traditionally landless.

A few micro level observations also concur to this trend of 'depeasantisation'. In 1873-74 the Patna Commissioner reported that Rajwar and Musahar are the two poorest castes in the Bihar and their only occupation were watchmen.²⁵ The Kharwar tribes of Shahabad lost their land to non-tribal and joined the roving band of landless agricultural labour (C. S. B; 1879 : 348-72). In his report on Gaya in 1886, Stevenson-Moore pointed out that the landless agricultural labourers in the district of Gaya were mostly Kahar, Chamar, Dusadh, Musahar and Rajwar.²⁶ Grierson talked in the same manner in an earlier report on the same district (Grierson, 1893 : 110-114). In Kajah Musahri village the Bhagalpur Commission found that the landless labourer were either Musahar or Mochi, (the cobbler) or

25. Selections from Divisional and District Annual Administration Report : 1872-73, (1874 : 324).

26. Stevenson Moore, Report on the Material Condition of Small Agriculturists and Labourer in Gaya, Calcutta; p.29.

Lohar.²⁷ In village Paharpur in Bhagalpur district, the collector recorded that the landless labourer were mostly low castes.²⁸ In 1893-98, the study of 40 Narhan estate villages showed that the pure labouring classes were Kahar (bearer), Musahar and Khatbwe.²⁹

The conclusions of this section are, therefore, this: First, the class of agricultural labour clearly increased over 50 years from 1881. The biases in the census data, however, prevents any definitive observation about the magnitude of their growth. The attempt to look into question from the caste/occupation did not reveal anything more substantial except (1) that the agricultural labourers were mostly drawn from lower castes, artisanal castes and tribals; and (2) that signs of slow differentiation was also evident and it affected even the upper castes.

9.4 Wages of the casual labour

Like the information on the agricultural labour population the data on their wages is also incomplete. Chaudhuri fairly accurately sums up the nature of wage data: It is scanty, he says, uncomparable and not related to identical region (Chaudhuri, 1984 : 169). It is due to the nature of the labour market in rural society; it remained localised and fragmented. The variety in wages, mode of payment, timing and factors going into their determination cannot be encapsuled into a simplified rates as in case of the industrial wage. The one other contributing factor to this was the absense of the data collecting agencies. The agricultural wage data was collected only when the natural calamities like famine and flood necessitated such collection along with other poorer classes and even in that case the primary purpose was to compare the wages of agricultural labour with other poorer classes. The usual comment that one often come accross in these studies on agricultural labour and their condition was that the condition of the former was better than the depressed peasantry.³⁰ The colonial state was more interested in rent, and cultivators than the condition of the labouring classes.

27. Letter dated 2 May, 1888, from J. Beames, Commissioner of Bhagalpur, to the Secetary to the Government of Bengal, Revenue Department, in P. Nolan, Enquiry into the condition of the poorer classes; (1888.)

28. Latter dated 24 April 1888, from B. Naraian, Assistant Settlement Officer, Raj Banaili and Srinagar Estate to the collector of Bhagalpur.

29. Final Report on the Survey and Settlement of the Narhan Ward Estate (Monghyr District); p. 25.

30. For an example of this general trend, See, P. Nolan, Enquiry into the conditions of poorer classes, Revenue Department (Agriculture), July 1888. Even Grierson spent less than five pages on labour in his Notes on the District of Gaya with the comment that their condition is nearly same as that of the cultivators (Grierson 1893).

Sources of time series data on agricultural wages in Bihar are basically three :

(1) Prices and Wages in India; (2) Datta Committee Report and (3) the Census on Wages. Besides, there are reports, notes, travelogue of private individuals and government officials. While these individuals reports have often gone into a fair details of various aspects of agricultural wages, their usefulness are limited to regions and in time.

The Prices and Wages in India gives data on wages of able-bodied agricultural labour for Patna, Muzaffarpur, Monghyr and Purnea from 1873.³¹ The Prices and Wages data presented many problems:³² (1) The reporting agencies were untrained; they tended to gloss over varying conditions of agricultural wage employment (2) The agricultural labourers were usually paid in kind, either the entire amount or a part of it, especially the 'supplement' part like breakfast etc. They were extremely varying. The Prices and Wages ignored all these. (3) The Price and Wage data also failed to take note of varying conditions of agricultural employment. It took the easiest recourse of presenting the cash wages of the neighbourhood towns and urban centres as representatives of rural wages. It also failed to include 'supplement' an important component rural labour wages, in their calculation of agricultural wages.

The Datta Committee³³ did not do any the better. Though it criticised the Prices and Wages data for its inadequate coverage and inexactness, it too contained all those drawbacks. Its coverage was inadequate. Further it dealt with only free agricultural labour. It excluded Kamias from its counting who, in Bihar at least, constituted an important segment of agricultural labour forces.

The third sources of wage data, i.e. the census, is wholly inadequate. In Bihar, the census was held only on 1911 and 1916. But the figures were again scanty and inadequate and not comprehensive enough which made any precise comparison of this data with other sources difficult and any comment on that basis hazardous.

31. The Prices and Wages of India began publication from 1884, but gave data from 1873. The indifference of the colonial administrator about the agricultural labourer as a separate class entity is well-matched by the ignorance of some of the recent histeriographer on the data sources of agricultural labour during the colonial period. For this see Arun Ghosh, et al in Social Scientist, (1984.)

32. Prices and Wages in India, 13th issue, Calcutta, 1913. We have not been able to see O'Connor's comment in the 1886 volume of Prices and Wage.

33. See chapter III and Appendix G in K.L. Datta, Report on the Enquiry into the Rise of Prices in India, Calcutta, (1914)

The other sources of wage data, as mentioned earlier, are individual and official surveys, reports and documents. We begin with these first. We have presented two sets of table from such sources: First set comprise of the wages of daily agricultural labour (Table 9.7, 9.8, 9.9, 9.10, 9.11 and 9.12). It gives data on different point of time beginning from the days of Buchanan (1808-1812) to 1948. It also gives regionwise information for these periods. (2) The other set of data is the operationwise data prepared from the information fragments given in above sources (Table 9.13 to 9.15).

The year, and area covered in these sources are presented in the tabular form below (Table 9.6) :

Table 9.6
Sources of wage data

	Year covered in the sources	Data Source (Short title)	District covered
1.	1808-1812	Buchanan	Patna, Gaya, Shahabad, Purnea Bhagalpur.
2.	1874-1881	Selections from Division : Bhagalpur, Purnea, Monghyr.	Patna, Muzaffarpur, Champaran.
3.	1888	Enquiry Into the conditions of poorer classes	Patna, Muzaffarpur, Champaran Bhagalpur, Purnea and Monghyr.
4.	1892	Memorandum on the Material Condition	Patna, Monghyr, Bhagalpur Purnea.
5.	1887-1913	Settlement and Famine Reports	Darbhanga, Muzaffarpur, Champaran Monghyr, Purnea or Bhagalpur.
6.	1938-1948	Indian Journal of Agricultural Economics.	Bihar

The sources are scattered both areawise and timewise and likely to contain unknown biases. The individual reports were affected by individual inclinations though a few of them are quite authoritative and detailed; e.g. Buchanan's diary and Grierson's note.³⁴ Subject to this, the following indicative observations can be made about various aspects of agricultural wages in North Bihar on the basis of the Tables 9.7 to 9.15.

First, the wages of the men agricultural labourers were higher than that of the women; and the wages of the later was higher than that of the boys. This was an universal feature (Table 9.8, 9.10, 9.11 and 9.12). Only exception was the Patna - Bihar region in the early nineteenth century for which we had reports by Buchanan (Table 9.7).

34. See in this connection Bagchi's comment on Buchanan in Bagchi (1976).

Grierson argued that this was because the women, at least in Gaya district, did lighter work like weeding, etc than the men (Grierson, 1883).

Second, the wages were paid mostly in grain, usually in coarse grain like Khesari, Makai, Kodo etc. and occasionally in unhusked paddy. This again was a universal feature throughout the period of our study as evident in all the tables. O'Malley, Hunter and Buchanan earlier reported the same thing. In some areas of Bhagalpur district, it was the practice to pay the wages of weeding operation in dhan (unhusked paddy). Only at the time of harvest the agricultural labourer got his wages in the crop that he cut. The Kamlas (bonded labour) did not even get that. He always got wages in coarse, inferior grain. Grierson in fact, made this type of grain payment the distinguishing feature of the Kamlas (Grierson, 1883).

Third, sometimes the 'supplements' formed a separate component of daily wages. The 'supplements' were invariably paid in kind and the quantity and grain paid varied extremely. It could be meal or breakfast. For example in some of the villages of Bhagalpur district in 1880 the labourer were given meal (Table 9.8). In the interior of Saran in the 1880 they were given only 1/4 sers of grain or even peas as breakfast (Table 9.9). In Champaran district between 1887-1913 they got only 1 2/3 Chatak grain as breakfast, and in Muzaffarpur district only 2 Chatak makai as meal (Table 9.11). Buchanan's report also gave similar variations in the quantity, nature and crop given in the 'supplement' (Table 9.13) : It was given either as Sattu (pasted grain), or as roti (cake) or just in the form of grain. And it was always paltry - 1 to 2 Chatak in weight.

Fourth, in some case the wages were paid on time rate basis; e.g. in ploughing, transplanting, weeding, etc. But in some other place the wages were paid at piece rate i.e. certain proportion of the crop cut. Often the wages were paid in instalments. In the Bhagalpur district, for example, a part of the wages were paid in the field during the work and a part at the day end (Table 9.8).

Fifth, the wage rates differed extremely from region to region. It differed from one season to another not only in amount but also in forms, i.e. cash or kind, depending on the nature of agricultural operation at that moment and the local conventions. For example in Shahabad between 1874 and 1881 though the general rate was 4 ans, the rate in the month of Katik (October-November) was 6 ans - 8 pies; in Jeth to Asad

(May to July) it was in kind of 1 ser grain; in Sawan to Bhado (July to September) ;1.5 ser grain in Aswin (September - October) and 1.9 ser (Table 9.14).

Sixth, The rates in the interior village were less than that of the areas near urban centres (Table 9.9 and 9.14).

Seventh, the wages of outside labour could be different from that of the village servants (Table 9.12 and Table 9.15). For example, it was found that in the Tekari estate in the Gaya district the outside labour used to get 1 out of 12 to 21 bundles at the time of harvesting and occasionally some extra bundles, but the village servant got at the rate of 1 out of 11 to 16 bundles (Table 9.15) and was given nothing else.

Eight, the wage rates also depended on the class of employers and also employees. For example, it was found that in Monghyr in 1910s the harvest wage rate was 1/14 bundles if the labourer was a village tenant; it was 1/18 bundles if the labourer was an under-ryot; the rates was 1/12 bundles if the labourers was outsider or a ploughmen (Table 9.15). The under-ryots were thus discriminated against. The dominant landlord-employer could often force the labourer to work at rates lower than the market. The smaller landowner, on the other hand, could get labourer only at going wage rate.³⁵

Forms of payment also differed considerably. Near the urban areas the cash wages were more frequent. Buchanan reported that in Patna the labourers were often paid in cash (Table 9.7 and 9.9). The cash payment became more frequent in the twentieth century (see Table 9.11, 9.12, 9.13 and 9.15).³⁶

Table 9.7
Wages of Agricultural Labourer (Daily)
(North Bihar in early nineteenth century)

Region	District	Men	Women
Bihar and Patna	Patna	3-4 ples, or 4.5-6 sers coarse grain daily.	3-4 ples, or 4.5-6 sers coarse grain daily.
	Other	6 ples or 9 sers coarse grain daily.	6 ples or 9 sers coarse grain daily.
Shahabad		2.5 sers daily.	N.A.
Bhagalpur		3 sers grain or,9 ples - 1 ans daily.	N.A.

Note : Cash payment are more frequent in Patna District.

Source : Montgomery Martin, The History, Antiquities and Statistics of Eastern India, relevant volumes.

35. See in this connection, the evidence given by A. Sinha, Pleader, General Secretary, Bihar Provincial Kisan Sabha, Muzaffarpur, in Royal Commission on Agriculture in India, Vol. XIII; p. 268. The smaller landowner usually employed labourer who had land in the village. He often also had to give labourer some loan.

36. In the table the kind payment has often been converted to cash for convenience of presentation.

The kind wage was fixed more by tradition and, therefore, locally flexible, but tends to be sticky over time. The labourers usually preferred payment in kind as it protected them from the effect of price rise. In the period of price rise the cultivators often preferred to commute kind into cash wages. In late nineteenth and twentieth century Bihar they often tried to do that leading to social frictions. Though not much should be made out of this shift to cash wages, it certainly meant the penetration of market in the labour market relation and showed the strength and position of the employer classes.

Thus from out of this disparate group of data one can make a few observations about the wage structure in North Bihar. (1) The wages were paid mostly in kind. The 'supplement' were paid almost always in kind. 2) The wages were calculated on the basis of time, except in case of wages of harvest in which case the basis was piece rate. (3) The wages varied between regions, districts, rural and urban areas, between gender, age, operation and season. (4) In the twentieth century there had been an increasing tendency to pay wages in cash. It reflected the effect of market penetration. In actual reality of North Bihar labour market during the period, it also reflected the cultivators response to prices: the later tended to commute kind wages to cash and vice versa according as the prices increased and decreased.

In 1870, the Deputy Collector of Shahabad wrote that the condition of agricultural labourer in Bihar was worse than that in Bengal. He did not get more than 2 annas daily; his food was less varied; his furniture was cheaper and fewer; and his dwelling places less comfortable.³⁷ In 1879 one commentator wrote that the labourer preferred few bundles of grain to a few pies of money wages. If they could keep their body and soul together by eating the coarsest bread and water with that pittance they were normally happy.³⁸ In 1881, it was said that the labourers preferred kind wages to money wages. It protected them from the effect of prices. When out of work in the off season, they lived by eating wild produce such as roots, grasses and wild fruits and seeds.³⁹

39. Calcutta Review, (1879:150).

37. M.S.O.H. Ahmed, Deputy Collector of Shahabad, Report on the Agricultural Statistics of Shahabad, 1873-74. (1874); p.16.

38. East India (Report of Famine Condition), Appendix I, Miscellaneous Papers bearing on the conditions of the country and the people of India, (1881); p.166.

Table 9.8
Wages of Agricultural Labourer (Daily)
North Bihar (1880s)

(Daily Rates)

District	Wages	Others
1. Muzaffarpur (Pargana Bassarah, Chakla Nye)	1 ans or 1.5 ans	With or without food.
2. a) Bhagalpur	4 sers course grain (e.g. millet) or 2.5 sers rice (part paid in the field; part at the end of the day. Cash payment rare).	
b) Pargana Duphar; (village: Sitapur and Raghunathpur)	I. 5 <u>Kachcha</u> or 4 <u>pukka</u> ser un-husked; i.e., 3 ser husked rice II. a) 2 ser husked rice b) 1 ans 6 ples	meal No meal
3. Purnea (village: Kajah Musahari)	a) Men : 3 sers grain or 2 ans. b) Women : 1.5 ans 6 ples or 2.5 sers c) Boy (above 12) : 1 ans or 2 sers grain.	
4. Bhagalpur (village : Paharpore and Asai)	I. 1/2 paseri or 4.5 <u>kachcha</u> or 2.5 ser <u>pucca</u> ser <u>Marua</u> (inferior grain) or Paddy. II. 3 sers grain (Paid part in work; part at the day end)	Meal
5. Monghyr (village: I. Indruk; II. Mohanpur)	I. 2 ans II. 2 sers or 2 ans	
6. Hazaribagh (6 villages)	a) Men: 3 sers grain or 1.5 ans b) Women: 2 sers grain or 1 ans c) Child: 1.5 to 2 sers grain.	
7. a) Patna	Men : 2 to 2.5 ser coarse grain i.e., 1 ans 4 ples. Women: 1 to 1.25 sers coarse grain. 2 ans.	Food occassionally.
b) Bihar subdivision.		
8. Muzaffarpur	I 4 to 5 sers un-husked rice. i.e., 3 to 3.75 sers husked rice. II 4 sers <u>dhan</u> (paddy) or 5 sers. Makai (Indian Corn) (Earlier there used to be no supplement). III 2 ans (Earlier rate: 4 ples or 1 ans).	2 ' <u>roti</u> ' or cake of 1/2 sers barley or makai.
9. Champaran	a) Men : 2 ans; i.e.; 3 sers grain. b) Women : 1 ans 6 ples or 2.5 sers. c) Boy (above 12) : 1 ans or 2 sers grain.	
10. North Bihar	.5 <u>ples</u> or 1.16 ans.	
11. South Bihar	.24 <u>ples</u> or 1.08 ans.	

Note : 1. Seldom wages are paid in cash. We have shown rates in cash for more systematic presentation.
2. Pice = 1/4 of an ana. Ples = 1/12 on an ana.
3. I,II,etc means different types of rent in the same area.

Source : 1. Final Report on the Settlement Operation in Chakla Nye, Pargana Bissarah, District Muzaffarpur, Muzaffarpur, 1887.
2. Enquiry into the Condition of Lower classes of Population in the Lower Provinces of Bengal. (1888).

Table 9.9

Wages of Agricultural Labourer in North Bihar
(1874-1881)

(Daily rates)

District	Area	Wages	Supplement
1. Gaya	I. Not specified	2 to 3 sers coarse grain or 1.25 ans daily.	
	II. Sone canal area	2 to 4 sers coarse grain daily.	
2. a) Shahabad	I. Before Sone canal rate	2 ans daily	
	II. Current rate	Do	
b) Pargana Rohtas	I. Skilled labour	2 ans daily	
	II. Unskilled labour	Do	
c) Pargana Chynpore	I. Skilled labour	Do	
	II. Unskilled labour	Do	
d) Pargana Sasaram	I. Skilled labour	Do	
	II. Unskilled labour	Do	
e) Pargana Bhojpur/ Chausa	I. Skilled labour	Do	
	II. Unskilled labour	Do	
f) Pargana Barahgaon	I. Skilled labour	Do	
	II. Unskilled labour	Do	
3. a) Pargana Arrah	I. Skilled labour	Do	
	II. Unskilled labour	Do	
b) Pargana Behea	I. Skilled labour	Do	
	II. Unskilled labour	Do	
4. Saran	Sadar	2 ans daily	.5 sers grain or peas daily.
	Moffasil	1.5 daily	
	Interior	3 to 4 sers grain daily.	
	District		
5. Tirhut	Current Rate	I. 1.5 ans daily II Do	
	Suddar Station	2 ans daily	
	Mafasil Rate	1.5 daily	
	Interior Rate	3 to 4 ser grain daily.	
6. Champaran	Interior District	.25 to .19 ans daily.	

Notes : Pice and Pies converted to standard ans at the rate of :a) Pice = 1/4 of an anab) Pies = 1/12Source :- 1. Selections from Divisional and District Annual Administrative Report: 1872-73:
Bengal (1874)2. Report on the Agricultural Statistics of Shahabad (1873-74)(1874)

Table 9.10

Wages of Agricultural Labourer
in North Bihar (1874-1892)

(Daily rates)

1. Patna	a) Men :	2 to 2.5 sers coarse grain
	b) Women :	
	c) Child :	
2. Monghyr	Men :	Rs. 4 per month or 2.1 ans daily.
3. Purnea	Men :	Rs. 3 to Rs. 4 per month i.e. 1.25 ans to 2 ans daily.
4. Bhagalpur	Men :	2.5 sers or Rs. 4 per month or 2 corn per day.
	Women :	Same rate.
5. North Bihar	Men :	2 ans
	Women :	1.25 ans
	Child :	1 ans.
6. Hazaribagh	Men :	1.25 ans or 3 sers coarse grain
	Women :	1 ans or 2 sers coarse grain.
	Child :	.75 pies or 1.5 sers coarse grain.

Source : Memorandum on the Material Condition of the Lower Provinces of Bengal ; India Office Library, File No. L/Part/2/220.

Table 9.11

Wages of Agricultural Labourer
in North Bihar (1887-1913)

(Daily rates)

District	Wages	Supplement
1. Darbhanga	Men : 5 <u>kuchcha</u> ser coarse grain or <u>jaws</u> Women and Boys : 3 sers coarse grain 1.30 ans daily	
2. a) Muzaffarpur	4 <u>kuchcha</u> or 2.5 pucca sers coarse grain	Meal : '2 chatak <u>Makajor</u> .13 sers (Indian Corn)
b) Hajipur (Dist. Muzaffarpur)	1.25 to 2 ans daily	
c) Mahua thana (Dist. Muzaffarpur)	I. a) 1 ans daily b) breakfast: .25 ans daily II. a) 1.25 b) No breakfast.	
3. Champaran	I. a) 1.5 ans II. 2.75 ser <u>pucca</u> malze III. 3.1 ser <u>pucca</u> millet.	Breakfast: 1 2/3 <u>chatak</u> grain daily.
4. Purnea:		
a) Pargana Tarakhardah/ Surajgar	1.5 ans to 2 ans daily	
b) Pargana Tajpur	2 ans to 2.5 ans	
5. Narhan Estate	a) 1.75 ser grain or 1.5 ans b) One meal.	
6. Banaili . 1887- Estate 1894		
a) Pargana Dhapar	5 <u>kuchcha</u> or 4 <u>pucca</u> ser of unhusked rice or coarse grain daily or 1.5 ans.	
b) Pargana Khubkhand	I. 4.5 sers <u>kuchcha</u> or 3.75 sers <u>pucca</u> coarse grain II. 3 sers <u>kuchcha</u> coarse grain.	Meal

Notes : 1. Women get less than men usually
 2. Grains are inferior crops like marua, khesari etc.
 3. Pies and Pice have been converted at the rate of a) Pies = 1/12 of an ana b) Pice = 1/4 of an ana.

Source : 1. Relevant Settlement Reports.
 2. Appendix to the Report of the Indian Famine Commission, 1898, Evidence Vol.; Vol. I, Bengal.

Table 9.12
Wages of Agricultural Labourer (Daily)
in North Bihar
(1939 and 1948)

	Agricultural Labour (daily)	Ploughing	Reaping
1. North Bihar :			
1939	Men : 3 ans daily Women : 2.5 ans daily	Nil	1/10 bundle to 1/16 bundle daily
1948	Men : Rs.1.5 ans daily Women : .75 ans daily.	2 to 3 sers paddy or <u>jaw</u> and <u>Khesari</u> .	Same
2. South Bihar :			
1939	Men : 4 ans daily Women : 3 ans daily	Nil	N.A.
1948	Men : Rs.1 ans 8 daily Women : .75 ans daily	3 to 4 sers paddy or <u>jaw</u> and <u>Khesari</u> .	N.A.
3. Other District :			
1939	Men : N.A. Women : N.A.	N.A. Outside Labour : Village Labour/ Servants:	1/21 bundle 1/16 bundle
1948	Men : Rs. 1 daily Women : .75 ans daily.	N.A.	N.A.

Note : 1. For threshing : 100 'anti' (bunch) per 1000 anti threshed. It is specially in 'diara' areas of Patna, Saran etc.

Source : Indian Journal of Agricultural Economics, Vol. III, No.1, April, 1948.

Table 9.13

Operationwise Wages of Agricultural Labour in North Bihar (early nineteenth century)

	Bihar and Patna				Purnea			(per day)
	Wages	Supple- ment	Wages	Supple- ment	Wages	Supple- ment	Wages	Supple- ment
1. Ploughing	1. Azimabad 2 pies 2. Not specified 3 ser grain 3. Do 1.5 -2 pies 4. Nawada 3 ser grain	.5 ser - .5 ser 'sattu' .5 ser 'sattu'	- - - -	- - - -	2 pies	.5 pies	2 pies	-
2. Weeding	-	-	-	-	-	-	1 pies	1.7 <u>chatak</u> grain.
3. Watering	1. Azimabad 3 pies 2. Nawada 3 ser	.5 ser 'sattu' .5 ser 'sattu'	- - -	- - -	- -	-	-	-
4. Transplan- ting	-	-	-	-	-	-	6 pies or 3 ser grain 5.5 un hus- ked paddy .5 ans per month or or 1.7 ser daily	-
5. Harvesting	1. Azimabad 6.5 ser grain 2. Nawada 1/21 bun- le or 10 ser	- 'Ati': 6 sers Lara: 17.5 sers	- -	- -	1. 2.	-	1/9 bundle food and clothes: 2 pies	2 sers grain
6. Threshing	1. Patna 1/13 sers crop reaped 2. Gaya 1/19.1 'do' 1. Azimabad 1 ser grain	- - .5 ser <u>sattu</u>	- -	- -	3. 4. Dam- daha	-	2 sers	<u>Khari/</u> <u>Lara</u>
7. Cleaning	-	-	-	-	-	-	-	-

Table 9.13 (Continued)

Operationwise Wages of Agricultural Labour in North Bihar (early nineteenth century)

(per day)

	Shahabad		Bhagalpur	
	Wages	Supplement	Wages	Supplement
1. Ploughing	-	-	3 sers of husked rice or coarse grain	1. Loan: Rs.5, Rs. 20 2. extra allowance to other work.
2. Harvesting: (By Daily Labour)	I. 3.5 sers of crops crops per 1 mds	-	1/16 to 1/20 bundle (8 to 11 percent of produce)	
	II. 6 ser unhusked rice or 4.5 ser husked rice	-		
(By Servants)	I. 4.75 ser grain		1/6 bundle	
3. Harvesting by Ploughmen	II. 10.5 sers grain			
	IV. 1/21 to 1/21 bundle			
	6 sers un-hus- ked rice or 4.5 husked rice	Lorhur : upto 5 per cent of produce		

Note : 1. For replacement of ploughmen, the rate is 3 pan of cowries or 3 sers grain per day.

2. Rates of Ploughmen given by Buchanan refer to Kamia. We have used this for ploughmen in general. There is little difference in wages of ploughmen and Kamia except in the condition of employment.

3. Reaping is done by both daily labour and annual servants. The crop is then carried to threshing floor. The man who gets higher rates in reaping also does the threshing.

4. (a) 'Sattu', or 'Sattoo' = parched grain.

(b) 'Bojha' = load,

(c) 'Ati' = a handful of stalk of any grain. It is also known as Lorhu, Lara, Pangla and Uridaki and the quantity vary from 1/4 percent to 5 percent.

(d) 16 chattak = 1 ser. In case of "supplement" in this table, the rates have been presented in chattak due to difficulty of conversion.

Source : Montgomery Martin, The History Antiquities and Statistics of Eastern India, Cosmo Publication, Delhi, 1976; relevant volumes.

Table 9.14

Wages of Agricultural Labour in
North Bihar (Operationwise) : 1874-1881
(Daily Rate)

	Shahabad					Tirhut	Champaran
	General rate	Others	Land				
			Kartik	Jeth Asad	Sawan Bhado		
1. Sowing	4 ans.	6.5 ans.	1 ser pucca	1.5 ser pucca	1.9 ser pucca	1 bigha (.6 acre)	
2. Weeding	4 ans.						
3. Reaping	1 bolha sheaf.						
4. Threshing	1/21 maunds threshed						
5. Woman						I. Sadar: 1.25 ans II. Mufassil: 1 ans	1.25 ans 1.25 ans
6. Boys			1.5 ans		1.5 ans	I. Sadar: 1.25 ans II. Mofassil: 1 ans	1.25 ans 1 ans.
7. Child			1 ana		1.25 ans	I. Sadar: .76 ans II. Mufassil: .71 ans	.76 ans .71 ans.

Note : 1. In North Bihar reapers share works out to be 10 percent of the produce.

2. Plough Driver in Champaran gets 2 ser coarse grain daily.

3. $\text{Pice} = 1/4$ of an ans $\text{Pies} = 1/12$ of an ana.

Source : 1. Selections from Divisional and District Annual Administrative Report: 1872-73; 1874.

2. Report on the Agricultural Statistics of Shahabad, 1873-74; 1874.

Table 9.15
Agricultural Wages in North Bihar - Operationwise (1887-1913)

	Muzaffarpur Wage	Supple- Wage	Gaya District Wage	Saran District Wage	Supple- Wage	Darbhanga	Banaili Estate	South Monghyr	Shahabad
1. Ploughing	2 ans (1/2 day)	.5 ser kachcha, or .3 ser pucca coarse grain.		3 ans to 1.5 ans daily (1 ans for ploughmen).	1/2 ser 'sattu'				2.5 ans daily
2. Digging	2 ans	meal (coarse rice and pulses)		3 local ser daily	1 ser daily				
3. Transplanting		[Total: 2 ans daily]		1.5 ans daily					3.25 ans daily (part in cash, part in kind) 2.5 ans daily
4. Planting of Sugar Cane	1.5 ans	some food				1.5 ans daily			
5. Weeding	1/16 bundles			1.5 ans daily					
6. Reaping			1. Outside labour	1/16 to 1/20 bundles daily		I. 1/8 bundles daily [for Harwa]	1/16 bundles daily	I. Ten : 1/14 bundles daily II. Under Ten : 1/18 bundles daily	1/21 bundles daily
7. Threshing			2. Village servants			II. 1/12 Do III. Lab : 1/12 bundles daily			
8. Plough Hiring						2.5 ans daily	I. 1 ans daily per bullock pair II. 2 ans daily		4 sers daily
9. Irrigation				1.5 ans daily		1.5 ans daily			

Notes : 1. Woman gets less than man usually.

2. Grains are usually Marua, Khesari and similar other inferior crops.

3. a) Pies = 1/12th of an ana. b) Pice = 1/4th of an ana

4. Sometimes 6 sers daily as supplement

5. Supple- refer to 'Supplement.

Source : 1. Relevant Settlement Reports.

2. Appendix to the Report of the Indian Famine Commission, 1898, Evidence Volume; Vol. I; Bengal

Even as late as 1945 one of the respondents to the Famine Commission questionnaire talked almost in the same vein about the agricultural labourers of Bihar. The official reports expressed concern about the fact that the agricultural labourers carried a huge load of parasites on their back.⁴⁰ They were unorganised, belonged to the depressed classes and were in no position to get fair wages. He was doomed to the life of destitute for ever.⁴¹

Two sets of information are presented below in support of these observations about the trend of wage income of the agricultural labourers and their economic condition. The first set of data has been given in Table 9.16 which gives the composite wage data for three divisions of Patna, Tirhut and Bhagalpur and also North Bihar. In Table 9.17 we have given operationwise information on agricultural labour together with the wage data of the village and urban artisans.

Table 9.16 gives the quinquennial wages from the wage census. It showed that the money wages (ans per day) had risen or remained constant in the five years between 1911 and 1916, for agricultural labour, ploughman and village artisans and that for all the three divisions in North Bihar, except in case of ploughmen in Bhagalpur division and blacksmiths in Patna divisions in which cases the wage rates declined (Table 9.16).

Table 9.16
Quinquennial Wages rates of Agricultural Labour in Bihar
(Ana Per Day)

	Agricultural Labour		Ploughmen		Carpenter		Blacksmith	
	1911	1916	1911	1916	1911	1916	1911	1916
1. Patna Division	2.7	3.4	2.5	2.06	4.0	4.9	5.3	4.7
2. Tirhut Division	2.25	3.1	2.06	2.06	4.1	4.9	4.2	4.9
3. Bhagalpur Division	3.3	3.3	3.1	2.6	4.7	4.7	3.3	6.5

Note : 1. Divisional figures have been calculated by simple averaging of district figures.
2. For North Monghyr district only figures for Begusarai have been given for 1916. For districts like Bhagalpur and Monghyr sometimes separate figures have been given for northern and southern part of the district. Simple average of them have been taken to calculate district figure.

Source : Prices and Wages in India, relevant issues.

40. File No. Fam. 16/44, Deposit No. 1945. Extract from the Government of Bihar, Revenue Department.

41. L.R. File No. Fam. 13/44, Bihar and Orissa Proceedings 45; Government of Bihar, Revenue Deptt., 1944.

Table 9.17 which gives similar wage data for longer period between 1890 and 1938 confirms this rising trend in the money wages. It further shows that the money wages of the agricultural labour is lower than that of the village artisans and all kinds of urban labourers. Only the men and the boys in the general labour categories get less than them. For the agricultural labourers, the ploughing, reaping and transplanting (for men) are more paying jobs than other agricultural work. (Table 9.17).

Table 9.17
Wages and Wage Differential of Agricultural Labourer
and Semi Urban Labourer
(Operationwise : Ana Per Day)

	1890	1895	1900	1905	1910	1938
<u>Agricultural Labour :-</u>						
1. Ploughmen	2.5 (100)	2.5 (100)	2.6 (100)	2.6 (100)	3.5 (100)	3.17 (51)
2. Reaper	2.5 (100)	2.5 (100)	2.6 (100)	2.6 (100)	3.5 (100)	6.17 (100)
3. Weeder-Man	1.75 (74)	.75 (74)	2.5 (96)	2.5 (96)	3 (85)	3.17 (51)
4. Weeder-Woman	1.75 (74)	1.75 (74)	2.6 (100)	1.75 (67)	2.5 (71)	2.84 (46)
5. Sower and Transplanter-Man	2.5 (100)	2.5 (100)	2.6 (100)	2.6 (100)	3.25 (92)	3.45 (55)
6. Sower and Transplanter-Woman	1.75 (74)	1.75 (74)	2.6 (100)	1.72 (66)	2.25 (64)	3.17 (51)
7. Other Agricultural Labour	1.75 (74)	1.75 (74)	1.75 (67)	2.25 (86)	2.25 (64)	-
8. Village Carpenter	2.6 (104)	2.6 (104)	4.06 (153)	4.6 (100)	5 (142)	-
9. Village Blacksmith	3.75 (150)	2.6 (104)	3.5 (134)	4 (153)	4.5 (128)	-
10. Village Gharami	2.6 (104)	3.25 (130)	3.5 (134)	4 (153)	5 (142)	-
<u>Urban Labourer:-</u>						
11. Carpenter (common)	4 (160)	4 (160)	5 (192)	5.6 (215)	6.9 (197)	-
12. Blacksmith (common)	4 (160)	4.9 (196)	5.6 (215)	6 (230)	7 (200)	-
13. Mason (common)	3.5 (140)	3.9 (140)	4.6 (176)	4.9 (188)	5.6 (160)	-
14. General Labour-Man	2.6 (104)	2.5 (104)	2.6 (100)	2.5 (96)	3.5 (100)	-
15. - do - Woman	1.75 (70)	1.75 (70)	2.5 (96)	1.75 (67)	2.9 (82)	-
16. - do - Boy	1.4 (56)	1.4 (56)	1.75 (67)	1.65 (63)	1.75 (50)	-

Sources: 1. Report on Enquiry into the Rise of prices in India.
2. Agricultural Wages in India, 1952, Vol I

In order to stress further some of these aspects of wage trend a new set of wage data have been presented in the Tables 9.18 to 9.20 along with their graphs. Table 9.18 shows the time series (from 1873 to 1907) of the nominal wages of ablebodied agricultural labour and their indices. Table 9.19 gives their real wage series in the terms of bajra and rice. The indices of these two series have been shown in table 9.20. The graphs of all these series - nominal and real wages — have been shown at the end of this chapter.

This wage data have been taken from the Prices and Wages of India. But it has to be adjusted to neutralise as far as possible some of their inherent drawbacks. The Price and Wage data does not include 'supplement' and actually represents wages of the urban areas, which, of course, more than offset the exclusion of the supplement component in the wages of agricultural labour. The wage data given by Report of Enquiry into the Price Rise in India includes "supplement" but its data collection is open to question and contains unknown biasas.⁴²

To solve the problem we have adjusted downward the Price and Wage data by 16 percent. The ratio of 16 percent has been arrived at by taking the ratio of the simple average of the wages between 1887 to 1889 of Purnea, Patna, Monghyr and Patna in the Price and Wage of India and the corresponding average wage rates of these districts as reported in the Report on the condition of the Lower classes of Population.⁴³ The adjusted wage series are in anas per day. For calculating the real wages the nominal wage series have then been converted to the corresponding amount of rice and bajra by using the corresponding retail prices of these food grains given by the Commercial Intelligence Department of the Government of India.⁴⁴ These wage rates are limited to four districts of Patna, Muzaffarpur, Monghyr and Purnea only.

The graphs of real as well as nominal wages presented here shows the presence of fluctuations. This observation is valid for all the four centres of Patna, Muzaffarpur, Monghyr and Purnea. Table 9.18 shows the nominal wage. The index of nominal wages show rise in the wages of agricultural labourers in all the four districts (Table 9.19). However, when the nominal wages are converted to real wages in terms of

42. K. L. Datta, Report on An Enquiry into the causes of the Rise of Prices in India, Calcutta (1914).

43. Letter dated 30th June, 1888, Bhattacharya has reduced it by 18 percent (Bhattacharya 1985)

44. Variation in Indian Price Level from 1861 to 1909 Expressed in Index Number, (1910).

Table 9.18
Nominal Wages and Index Number of Able Bodied Agricultural Labourer (Adjusted Series) (Anas per day)

Year	PATNA		MUZAFFARPUR		MONGHYR		PURNEA	
	Wages	Index No.	Wages	Index No.	Wages	Index No.	Wages	Index No.
1873	1.56	100	0	0	1.34	100	1.78	77
74	1.56	100	0	0	1.34	100	1.78	77
75	1.56	100	2.97	267	1.34	100	2.12	92
76	1.56	100	0	0	1.34	100	2.12	92
77	1.56	100	1.11	100	1.34	100	2.12	100
78	1.56	100	1.11	100	1.34	100	2.3	100
79	1.56	100	1.45	130	1.67	124	2.3	100
80	1.56	100	1.11	100	1.67	124	2.3	100
81	1.56	100	1.11	100	1.67	124	2.3	100
82	1.56	100	1.11	160	1.67	124	2.3	65
83	1.56	100	1.78	140	1.67	124	1.5	100
84	1.56	100	1.56	140	1.67	124	2.3	100
85	2.01	128	1.56	140	1.67	124	2.3	100
86	2.01	128	1.56	160	1.67	124	2.3	100
87	2.12	135	1.78	160	2.52	188	2.3	100
88	2.01	128	1.67	150	2.52	188	2.72	118
89	2.01	128	1.78	160	2.52	188	2.72	118
90	2.01	128	2.09	188	2.52	188	2.3	100
91	2.01	128	2.09	188	1.67	120	2.3	100
92	2.01	128	2.09	188	1.62	120	2.3	90
93	2.01	128	2.09	188	2.52	188	2.09	90
94	2.01	128	2.09	188	2.52	188	2.09	127
95	2.01	128	1.67	150	2.52	116	2.93	118
96	2.01	128	2.01	181	1.56	132	2.73	118
97	2.01	128	1.34	120	1.78	132	2.73	118
98	2.01	128	1.34	140	1.78	150	2.73	118
99	1.78	114	1.56	140	2.01	233	2.73	118
1900	2.01	128	1.56	140	3.13	150	2.73	118
1	2.01	128	1.56	140	2.01	150	2.73	118
2	2.46	157	1.56	140	2.01	188	2.73	126
3	2.46	157	1.56	181	2.52	188	2.91	116
4	2.46	157	2.01	181	2.52	150	2.69	92
5	2.46	157	2.01	181	2.01	150	2.13	145
6	2.91	186	2.01	181	2.01	183	3.35	
7	2.52	161	2.06	185	2.46			

Note : 1. For adjustment procedure see the text.
2. For index number the base year is 1877-78.

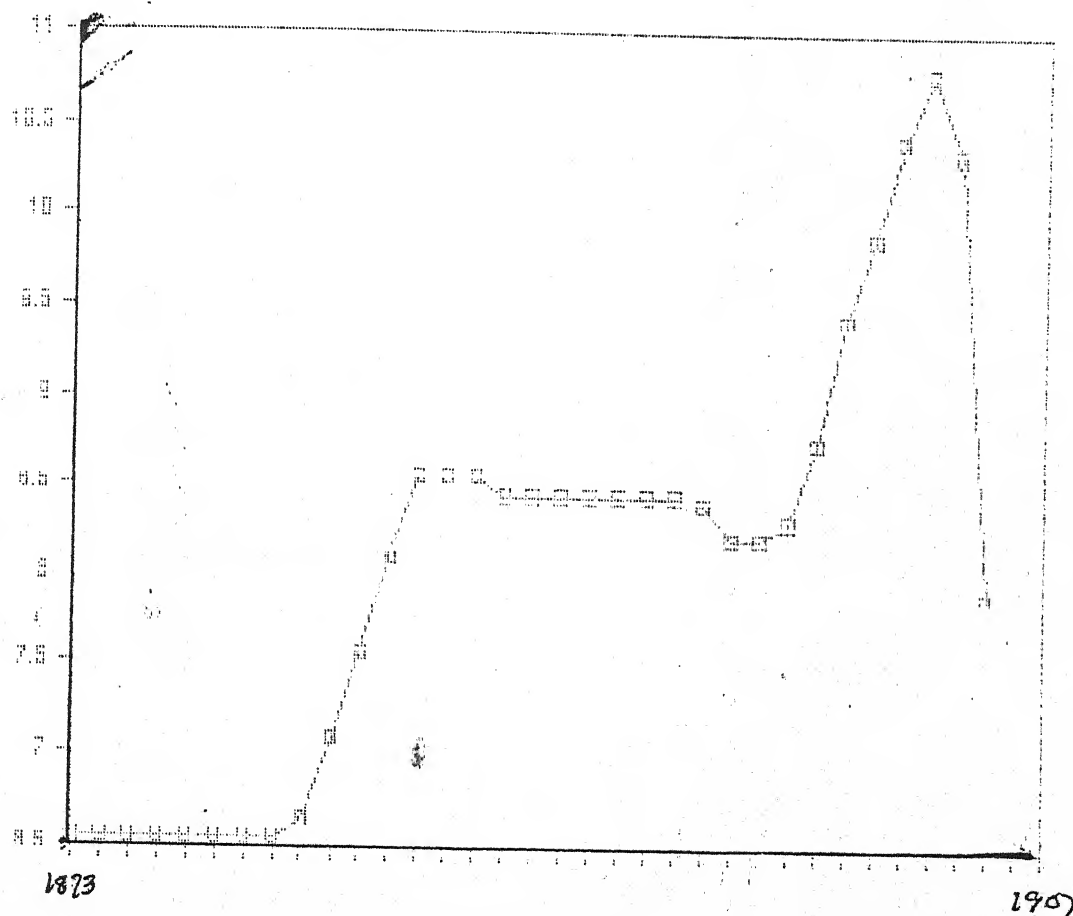
Source : Prices and Wages in India, relevant years.

Table 9.19
Real Wages of Agricultural Labour (adjusted series)

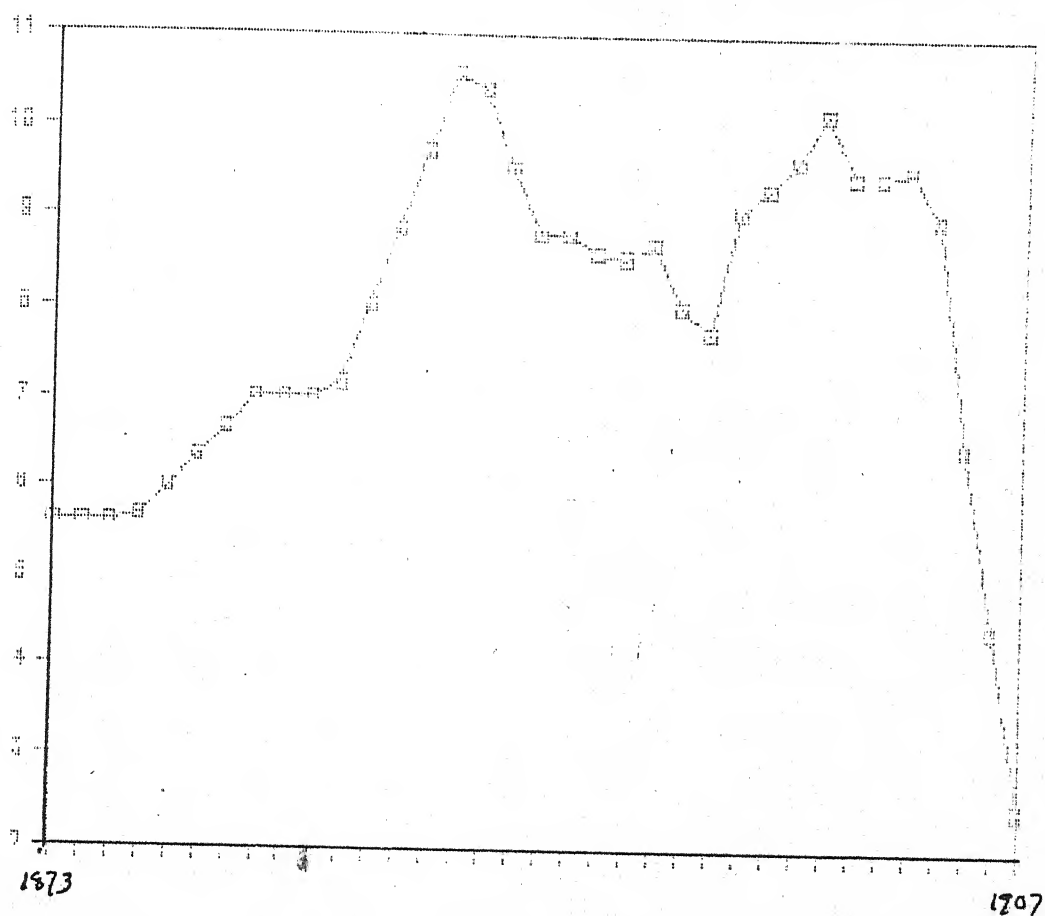
Year	In Rice (sers per day)			In Bajra (sers per day)		
	Patna	Muzaffarpur	Monghyr	Patna	Muzaffarpur	Monghyr
1873	1.93	-	1.63	2.18	0	1.87
74	1.64	-	1.41	2.24	0	1.92
75	1.89	3.6	1.62	2.44	4.64	2.09
76	1.69	-	1.45	2.48	0	2.13
77	1.44	1.03	1.24	1.7	1.21	1.46
78	1.21	1.13	1.04	1.23	0.88	1.06
79	1.25	1.16	1.07	1.37	1.28	1.18
1880	1.59	1.13	1.63	1.86	1.33	1.99
81	2	1.43	2.15	2.22	1.58	2.37
82	2.02	1.43	2.16	2.21	1.57	2.36
83	1.75	2	1.87	2.28	2.61	2.44
84	1.43	1.43	1.53	2.33	2.33	2.49
85	2.23	1.41	1.5	2.94	2.29	2.45
86	2.07	1.51	1.62	2.6	2.01	2.16
87	2.1	1.79	2.54	2.43	2.04	2.89
88	1.9	1.68	2.38	2.06	1.82	2.58
89	1.68	1.39	2.1	2.23	1.86	2.8
1890	1.7	1.5	2.13	2.4	2.13	3.01
91	1.66	1.73	2.08	2.06	2.14	2.59
92	1.39	1.45	1.16	2.01	2.09	1.67
93	1.53	1.59	1.24	2.32	2.42	1.87
94	1.64	1.7	2.05	2.45	2.55	3.07
95	2.32	1.45	2.18	2.4	1.99	3
96	2.62	2.62	1.19	1.75	1.75	1.36
97	1.2	0.8	1.06	1.38	0.92	1.22
98	1.57	1.05	1.4	2.21	1.47	1.96
99	1.52	1.33	1.72	1.8	1.58	2.03
1900	1.45	1.13	2.25	1.43	1.11	2.23
01	1.38	1.07	1.38	2.12	1.64	2.12
02	1.84	1.17	1.51	2.62	1.66	2.14
03	1.9	1.56	1.95	3.06	2.5	3.13
04	2.06	1.69	2.12	3.2	2.61	3.28
05	1.8	1.47	1.47	2.4	1.96	1.96
06	1.72	1.19	1.19	2.35	1.62	1.62
07	1.36	1.11	1.34	2.37	1.94	2.31
1873			2.2			2.49
74			1.87			2.56
75			2.57			3.31
76			2.3			3.37
77			1.97			2.31
78			1.79			1.82
79			1.85			2.02
1880			2.35			2.75
81			2.97			3.27
82			2.97			3.26
83			2.58			3.37
84			1.38			2.24
85			2.07			3.37
86			2.23			2.97
87			2.17			2.64
88			2.27			2.35
89			2.3			3.02
1890			1.9			3.25
91			1.59			2.36
92			1.75			2.3
93			1.7			2.66
94			1.81			2.55
95			1.75			2.49
96			1.63			2.55
97			2.14			1.87
98			2.38			3
99			1.8			2.76
1900			1.91			1.95
01			2.05			2.88
02			2.12			2.91
03			2.45			3.39
04			1.96			3.78
05			1.26			2.63
06			1.81			1.72
07						3.15

Note : For Adjustment See the Text.

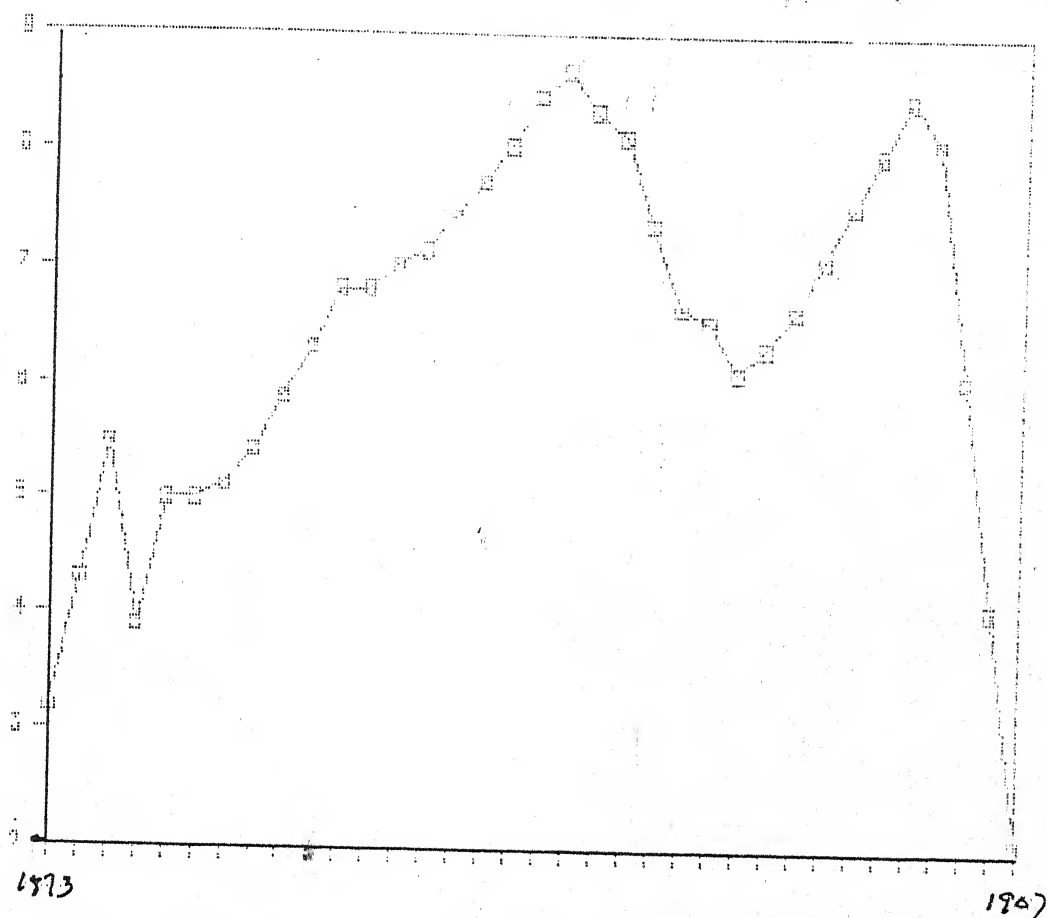
Sources : Prices and Wages in India, relevant Issue.



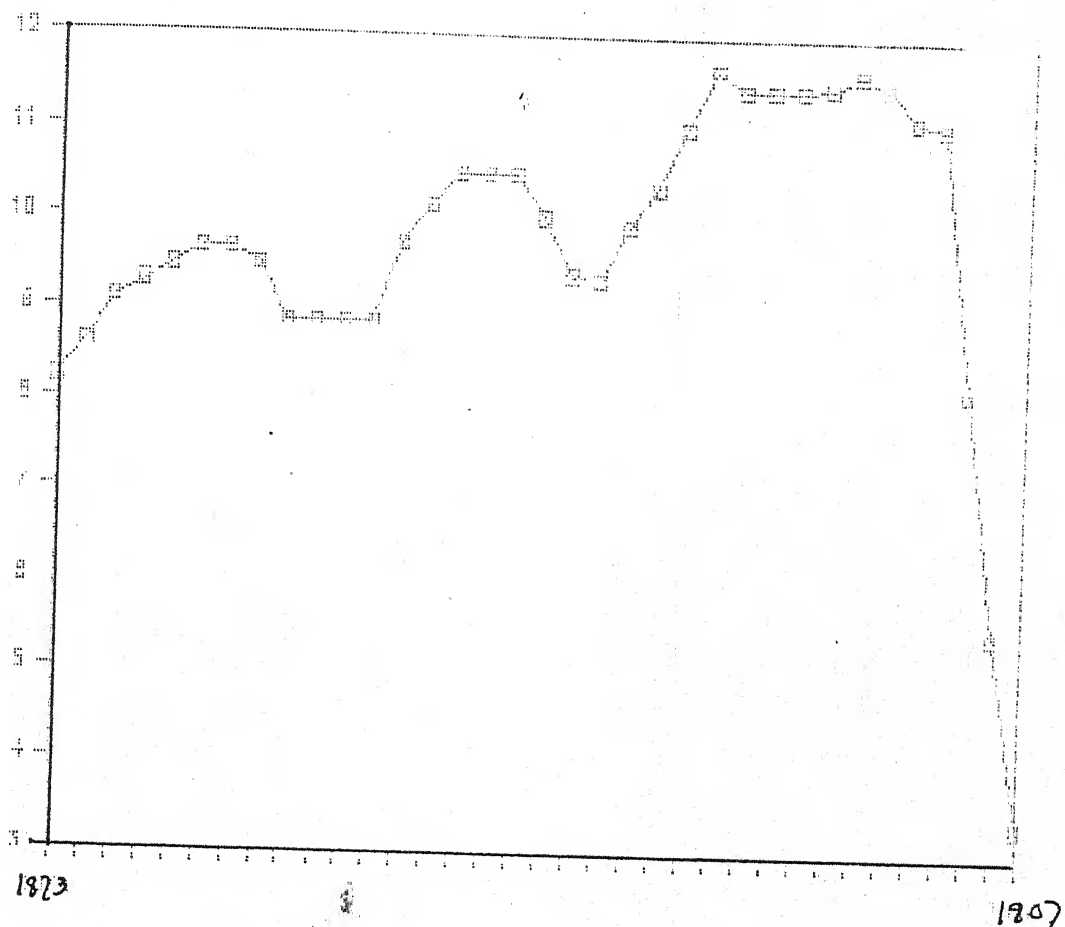
Nominal Wages ; adjusted series in five years moving average
(Patna)



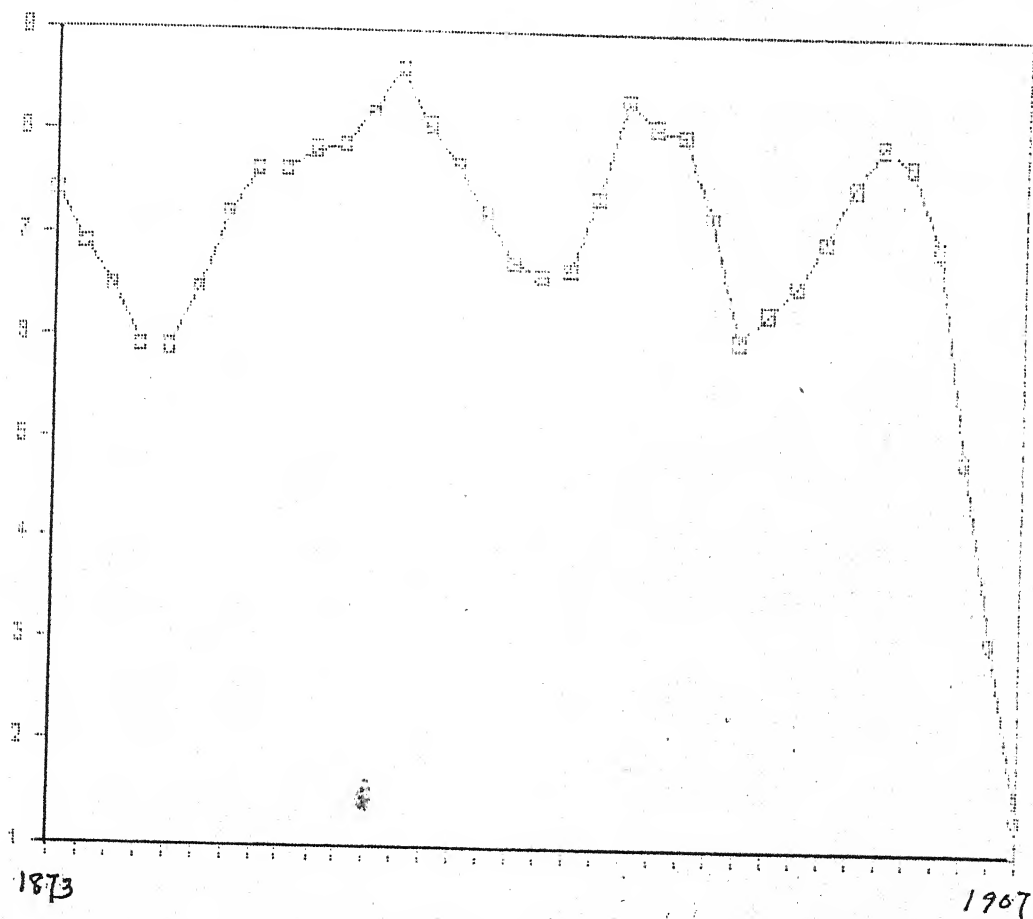
Nominal Wages; adjusted series in five years moving average
(Monghyr)



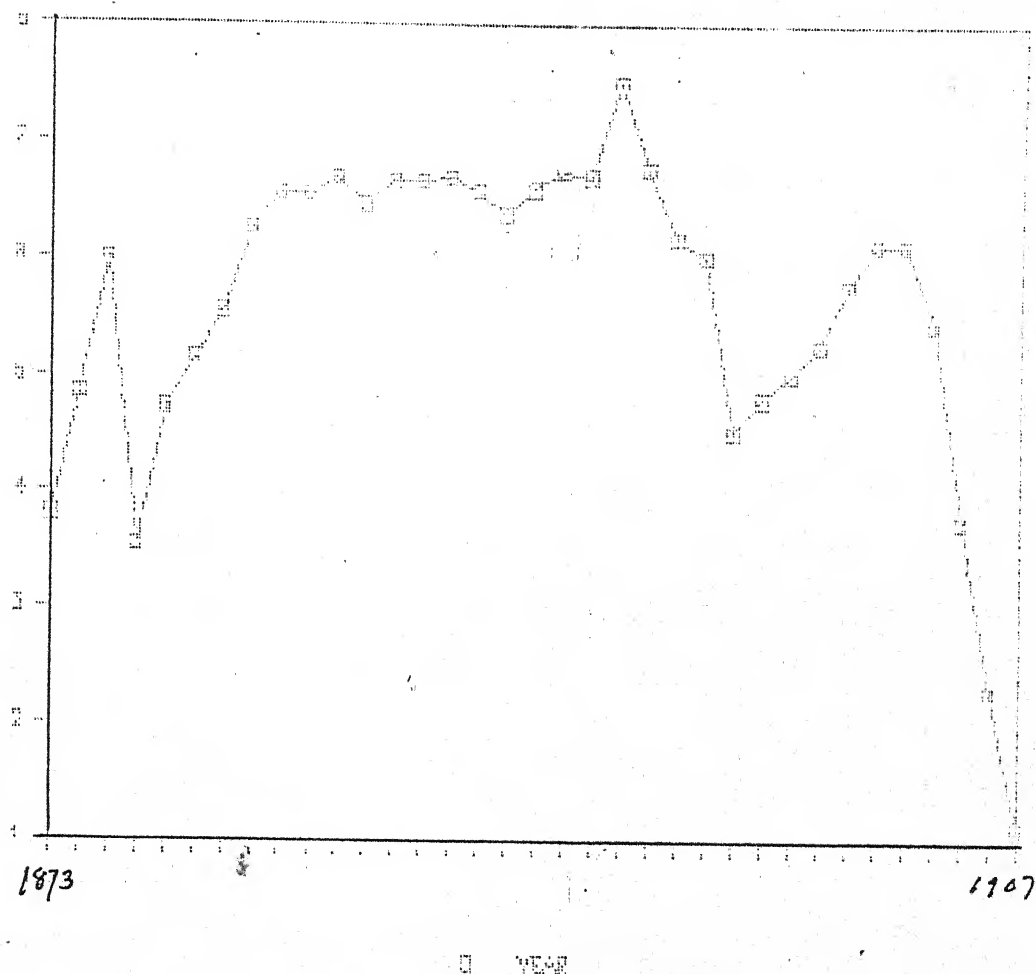
Nominal Wages; adjusted series in five years moving average
(Muzaffarpur)



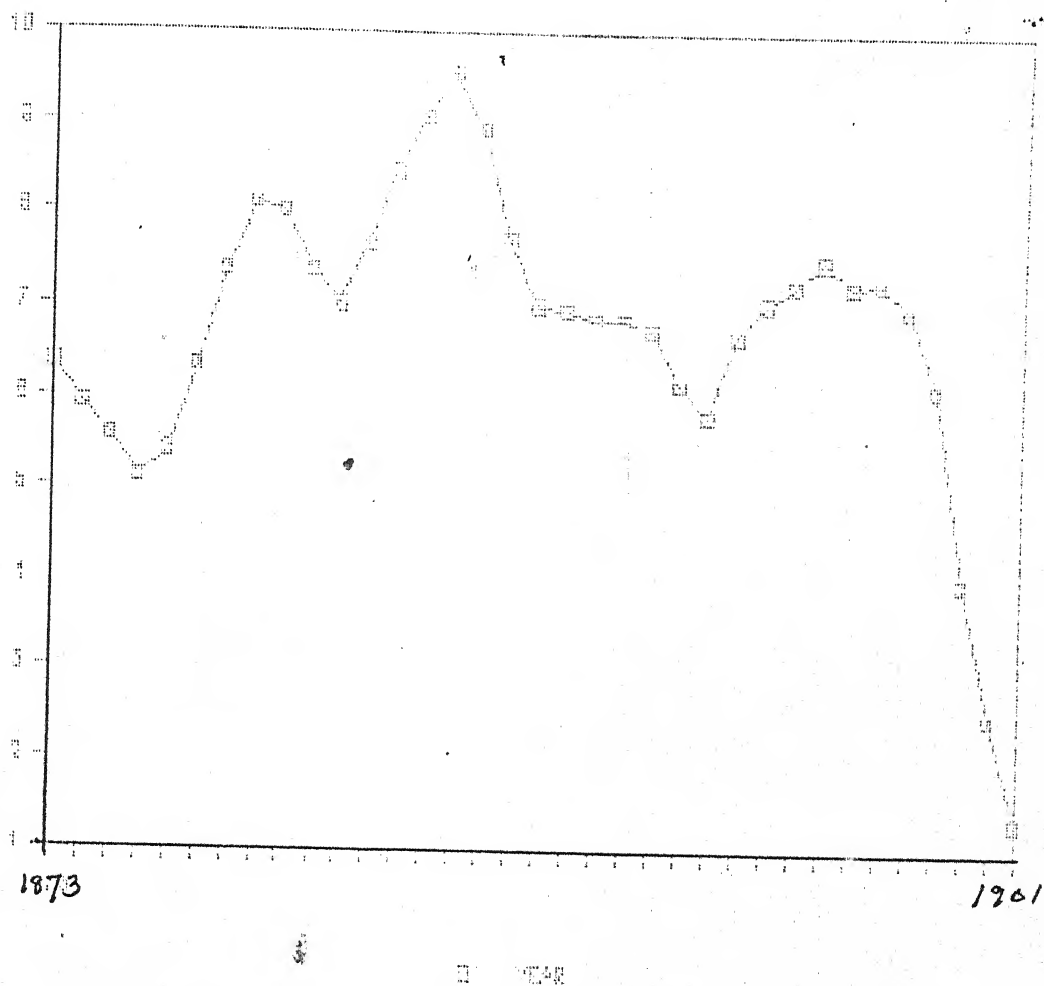
Nominal Wages; adjusted series in five years moving average
(Purnea)



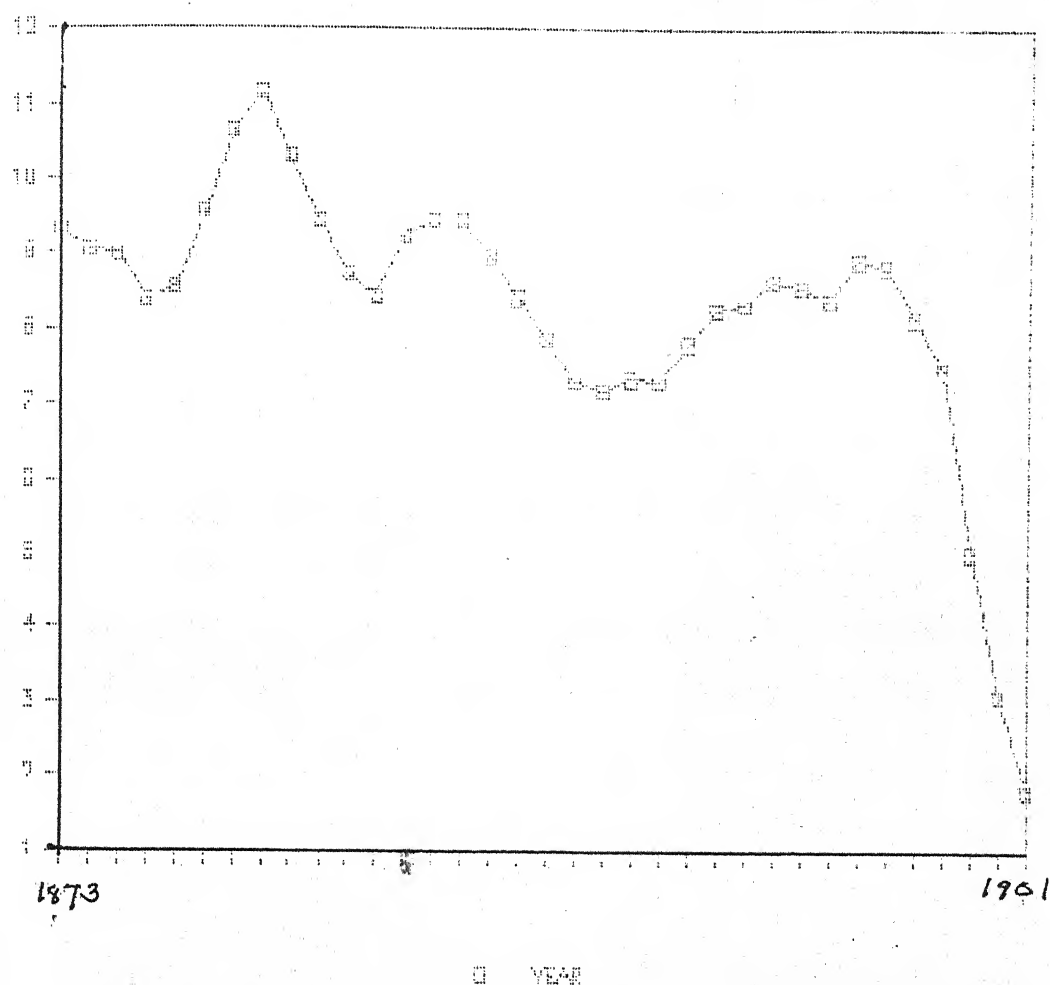
Real Wages (rice); adjusted series in five years moving average (Patna)



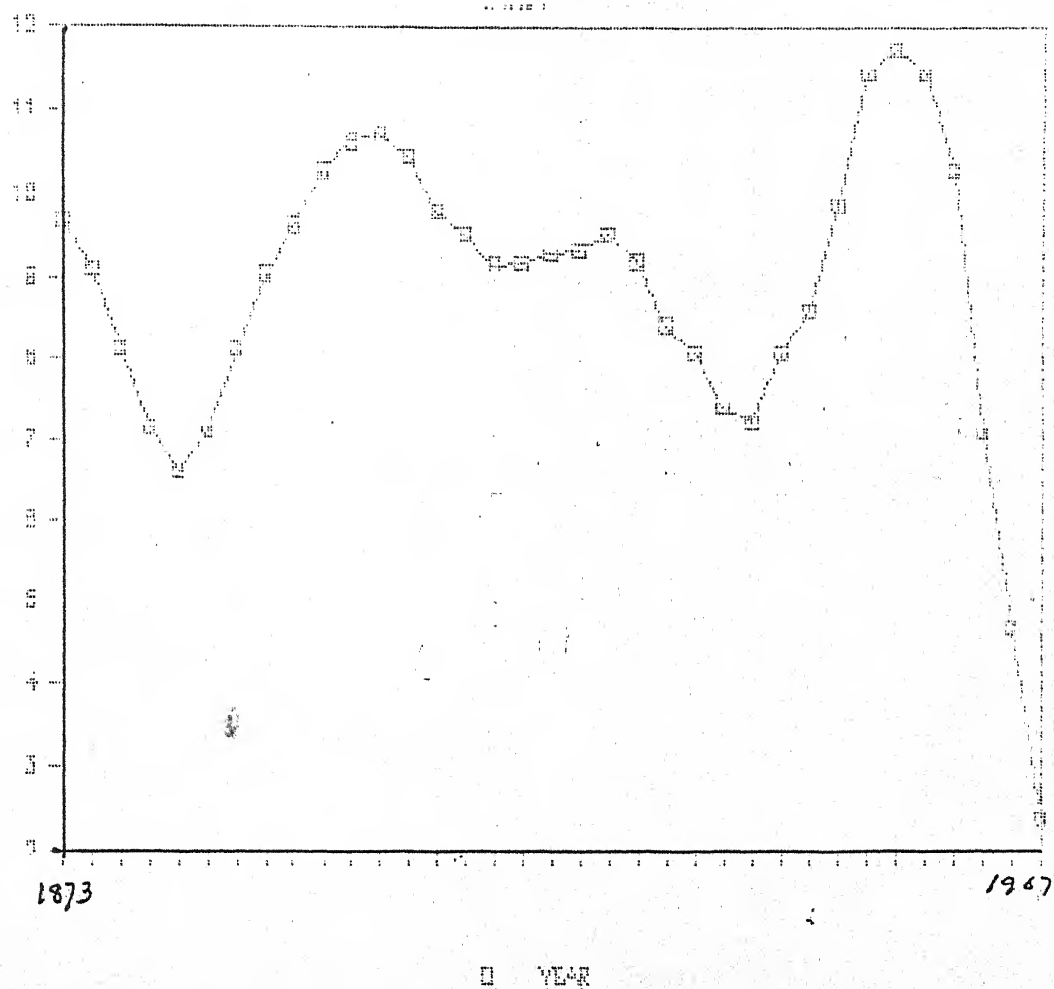
Real Wages (Muzaffarpur) in ^{Rice}~~Bajra~~; adjusted series in five years moving averages.



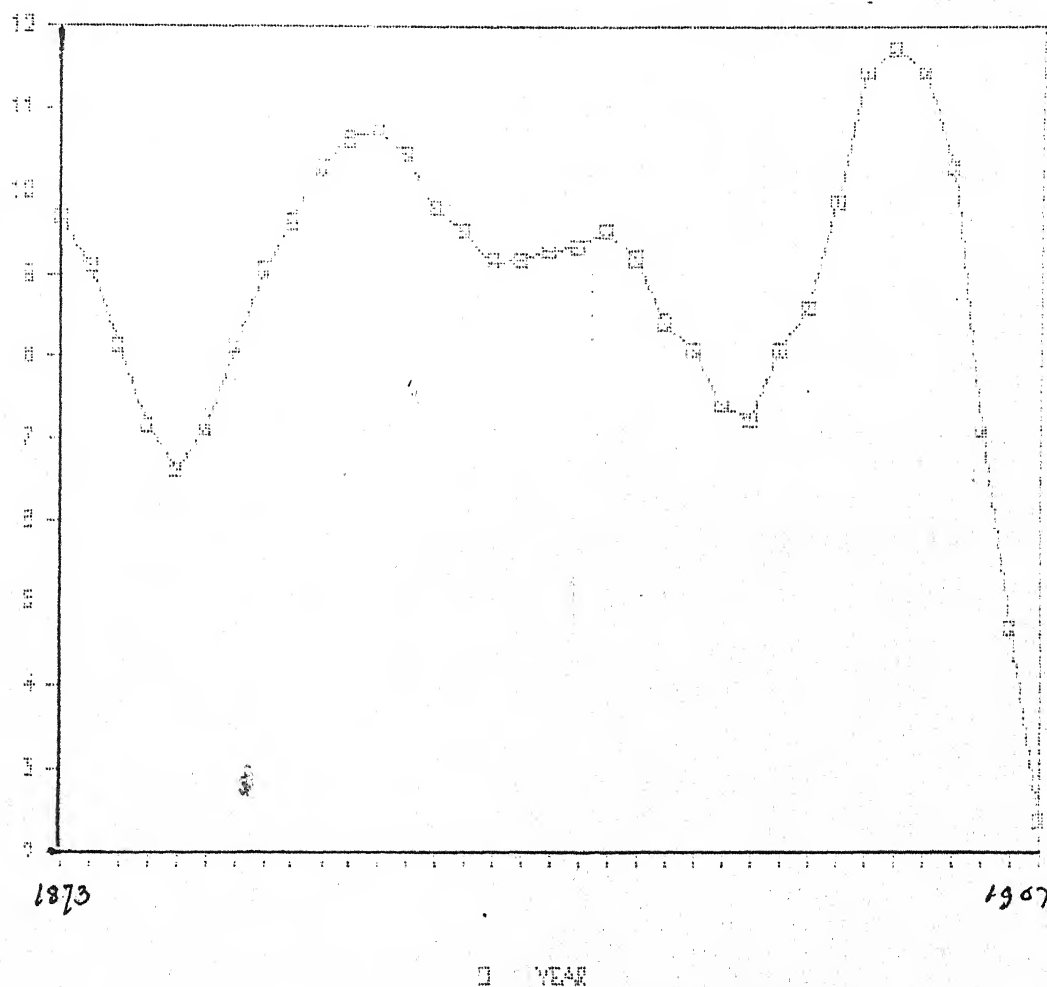
Real Wages (rice); adjusted series in five years moving average
(Monghyr)



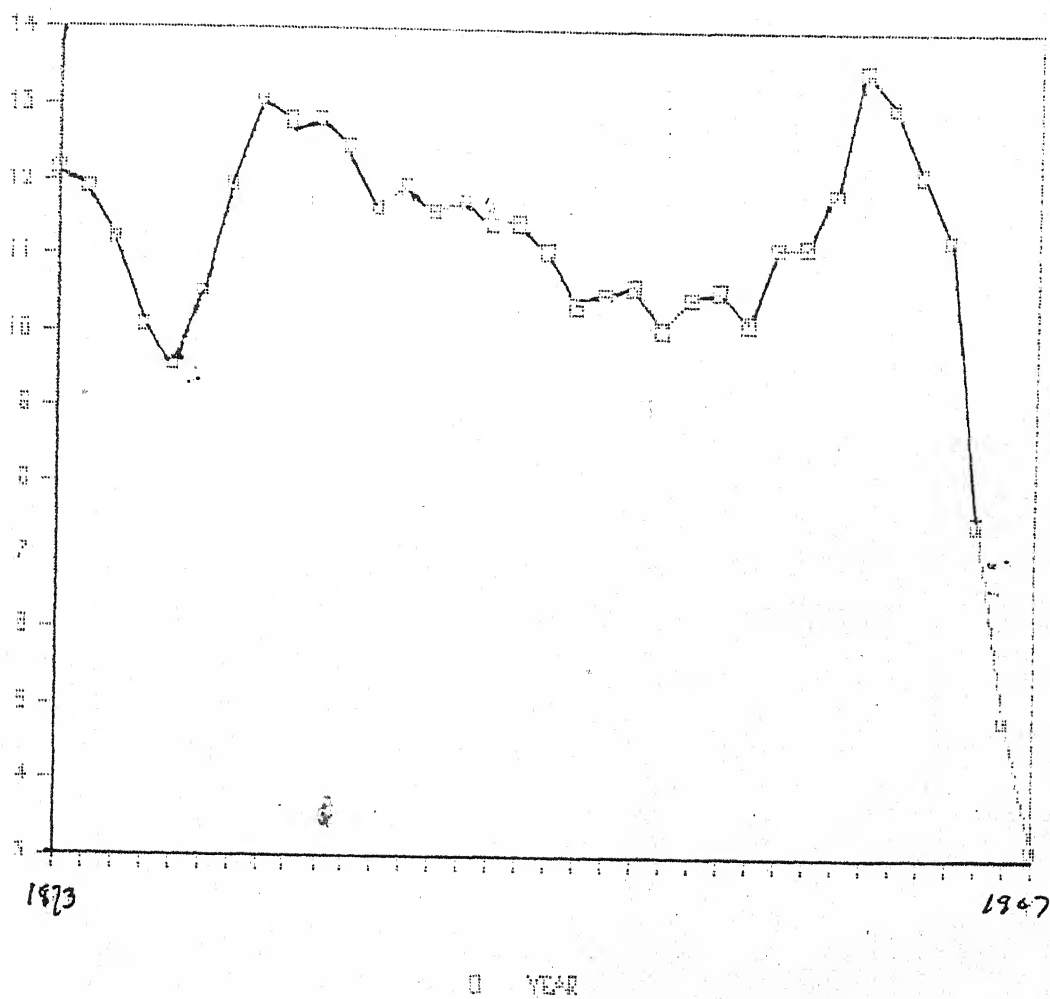
Real Wages (rice); adjusted series in five years moving average
(Purnea)



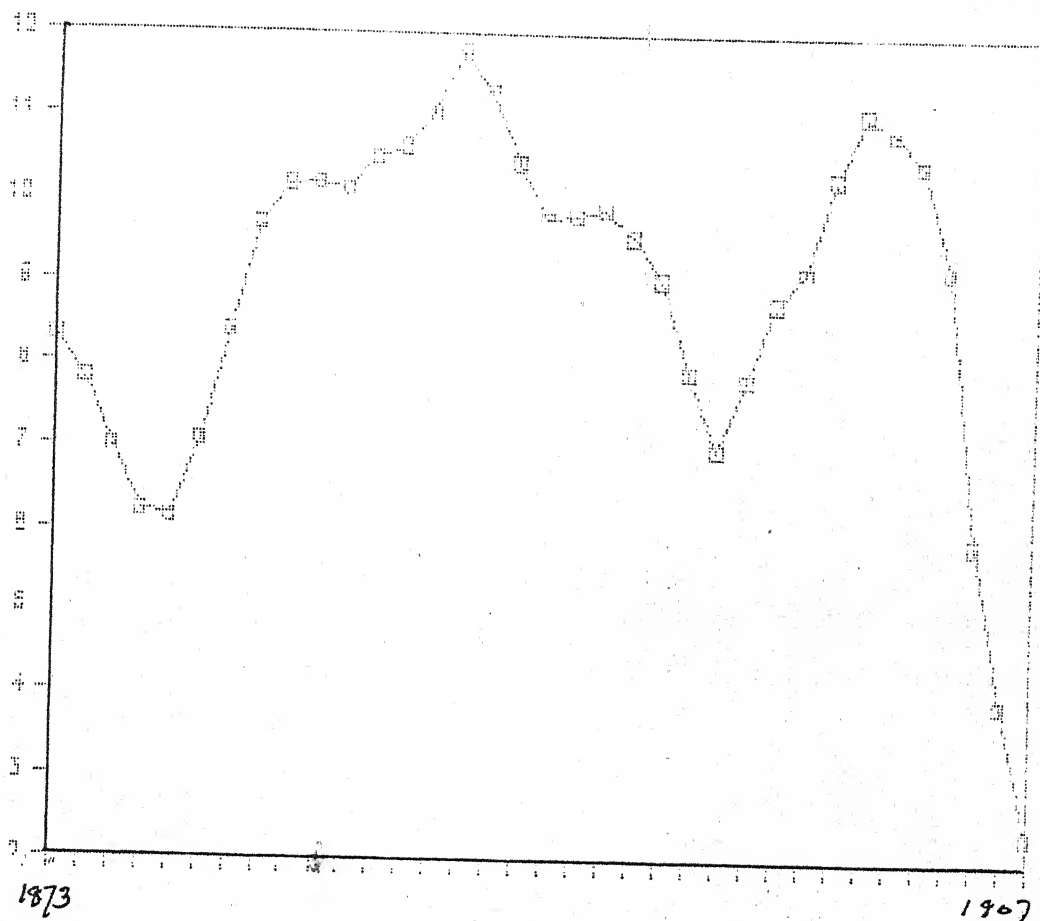
Real Wages (Bajra); adjusted series in five years moving average (Patna).



Real Wages (Bajra); adjusted series in five years moving average
(Muzaffarpur)



Real Wages (Bajra); adjusted series in five years moving average
(Mongkyr)



□ YEAR

Real Wages (Bajra); adjusted series in five years moving average (Purnea)

rice and bajra (Table 20) we find two different trends: '(1) The real wages in terms of rice shows fall in all the districts. (2) But the real wages in terms of bajra shows some bare increase. The difference in the movement of prices of these two foodgrains possibly explain the difference in the two trend. Between 1861 and 1909 the price of bajra has risen more slowly in relation to the price of rice'.⁴⁵ The crucial factor is, therefore, price.

9.5 Conflict between the agricultural labour and the cultivators

In the early decades of twentieth century there were frequent conflicts between the cultivators and agricultural labourers in Bihar on the question of higher wages as also on the forms of payment of wages. In April 1908 the agricultural labourers of Patna and Tirhut struck work as the cultivators wanted to commute grain wages to cash wage because of the price rise in 1908 and that too at the lower prices of 1907. In Bhagalpur the worker wanted to work either at old grain wages or at the higher money wages in order to compensate their loss from the 1908 higher prices.⁴⁶ In Patna district the workers struggle for higher wage continued in 1909. The workers protested demanding higher wages as compensation for continued rise of foodgrain prices. In Patna this struggle for higher wages continued unabated. It was reported that persistently high foodgrain prices in the district was the main reason for this persistent agitation.⁴⁷ In Bhagalpur, however, the resistance of the agricultural labourer petered out as the local foodgrain price slackened.

Conclusions of this chapter were, therefore, the following:

(1) The cultivating labourers are employed for short period. (2) This class of labourers were migratory in nature. The time and direction of migration depended on the time and the course of monsoon. (3) Though the census information created difficult problem of analysis, they showed that the number of agricultural labour rose between 1881 and 1931. (4) Their wages were paid mostly in kind. The supplement part was almost always paid in kind. Form, modes and rates of wages were varying. (5) The wages tended to be stagnant. The adjusted wage series of the able bodied agricultural

45. See Variation in Indian price Level from 1861 to 1909 Expressed in Index Number (1910), p.15.

46. Land Revenue Administration Report (1908-09)

47. Land Revenue Administration Report (1910-11)

laboures show that the nominal wages rose but the real wages fell. (6) The cultivating classes tended to opt for payment of cash wages as a response to rise in the foodgrain prices. The labouring class, on the other hand, demanded kind wages or higher money wages. The result had been strikes on some occasions. (7) Some degree of 'differentiation' was there in the rural society. But the 'pauperisation' was universal.

Chapter X

CONCLUSIONS

In this work, we have enquired into changes in the pattern of agricultural growth and in material conditions of labouring classes as well as their relations with their cultivator employers - landlords or rich peasants - in North Bihar during the later period of the British rule. Specifically, the period covered is between 1892 and 1941. During this period Pax Britannica opened up the interior of the country through the construction of roads and railways which brought it closer to the world market system. The impact of this integration was far reaching and substantial.

First, agricultural production in North Bihar fell during this period of colonial rule (Table 10.1). This fall was particularly marked in the foodcrop production. The proportionate fall in agricultural production in general, and food production in particular, in this region was higher than in Greater Bengal. Hence North Bihar agriculture exerted a downward pull on the agricultural performance of Greater Bengal during the period. The period 1907 to 1912 could be identified as the turning period in North Bihar after which the agricultural slump set in. With a positive and accelerating growth in population, particularly after 1921, this meant increasingly decreasing availability of food to the people from this period onwards.

Table 10.1

Long Term Growth Rates of North Bihar Agriculture

	Output	Area	Yield Per Acre
All crops	- 0.4	- 0.3	- 0.07
Food crops	- 0.9	- 0.5	- 0.4
Cash crops	- 1.0	0.8	0.2

For sources, see relevant tables in Chapter 3 and 4.

In contrast to the generally depressed state of food production, however, cash crop production increased during this period. The rate of increase was higher than in Greater Bengal and even in Punjab and Madras, the two quick growing agricultural regions of British India. Two specific features of cash crop production in North Bihar should be noted in this connection : First, indigo production became extinct after the 1910s and was replaced by sugarcane production. Second, cash crop production was marked by a high degree of fluctuations.

Turning to the components of the volume of agricultural output, we see that it can be decomposed into the acreage under crops and their productivity. In North Bihar the annual percentage growth rate of crop acreage declined in the period between 1891 and 1941. Further, over this period the growth rate of crop acreage was marked by high degree of fluctuations and regional variations. The fifteen years between 1907 and 1922 can be identified as the period of maximum acreage under crop in North Bihar.

Within this generally declining trend rate two contradictory tendencies persisted. The annual percentage growth rate of foodcrop acreage was negative during these fifty years. But the rate of growth of acreage under cash crop was positive (Table 10.1). In fact, the growth rate of acreage under cash crop in North Bihar was higher than in Bengal proper as observed by Islam. Thus, decline of acreage under cash crops in Greater Bengal during this period, as observed by Blyn, should be sought not in the regions of North Bihar but elsewhere. Both the acreage under food crops and cash crops, evince two other features. The inter division distribution of acreage varied overtime and the divisionwise total acreages also fluctuated greatly from year to year.

The yield per acre, the other component of the volume of agricultural output, was virtually stagnant. The trend rate change of foodcrop yield per acre was distinctly negative. But the cash crop yield per acre showed a small, positive rising trend (Table 10.1).

Increase in cash crop production was achieved mainly by transfer of areas from food crops to cash crops. The ratios of acreage under non-food grains to total crops showed increase particularly after 1930s, both in the divisions and in North Bihar as a whole. Also, the ratios of yield per acre of non-food crops to all crops rose throughout the period, except in the initial years, in the divisions as well as in North Bihar as a whole.

Thus the relationships between output, on the one hand, and area and yield per acre, on the other hand, can be summarised as follows: In case of all crops, both the rate of acreage and yield declined over time but the latter was the main contributing factor to the decline in output. Among the crops, the food crops were the main culprits in such a poor record of crop production. The yield per acre and acreage of food crops both contracted significantly, but the acreage contributed little more than half to the measured contraction in foodcrops output. In case of cash crops both the crop acreage and productivity increased over time with the rise in acreage contributing the major part to

the overall growth of production of cash crops. The better performance of cash crops could not entirely offset the negative trend contributed to overall production of agricultural output by the performance of food crops.

Coming to individual crops, we find that paddy was the single most important crops in North Bihar and both the yield and acreage of rice declined (Chapter IV). The production of maize and barley, two other major food crops, also fell during this period. The production of only two crops, wheat and gram increased but only just. Production of all the major cash crops such as sugarcane, linseed, rape and mustard and jute increased. But the production of tobacco and indigo fell. Indigo production, as we have already noted, became extinct in the twentieth century under the impact of international market. Indigo was largely replaced by sugarcane. The significant dose of tariff protection awarded to sugar by the rise of import duty on 1931 contributed to this significant growth.

In case of rice, both winter and autumn as also in case of maize, the main contributing factors to the decline of their production were shrinkages in their cropped area and fall in their yield per acre. Both these two components show negative growth rates. On the other hand in case of wheat and gram, both the acreage and yield per acre growth rates were positive, which reflected in the positive rates of production. One interesting case is the production of barley. In this case the rate of production, - 0.02 per cent, declined slightly, but the growth rate of cropped area was 0.5 per cent and the growth rate of yield per acre rate was -0.5 per cent.

These individual crops showed some specific features : First, their rates of growth of production, cropped area and productivity showed high degree of fluctuations from one quinquennium to the other. This is particularly so far the cash crops like sugarcane and jute. Second, the crucial period is 1907 to 17 after which the agricultural production, specially food production, declined steadily. The production of sugarcane, the main cash crop of the region, however, increased, though the real spurt in their production came after the quinquennium 1932-3 to 1936-37 especially after the 1930, when official protection was granted to it.

This depressed agriculture affected the material well being of the labouring classes. It would be reasonable to expect that the depressed condition of labouring classes would also react on acreage and yield of agricultural production, but we have

not enquired into their question of exactly in what manner this interaction will take place. These 'labourers' were not workers in a capitalist system of agriculture who were separated from their instruments of production. The rural society of North Bihar in the late nineteenth and early twentieth century was at a different stage of 'differentiation' where this process of separation remained incomplete. This was reflected in coexistence of various forms of labour, interacting with each other in labour market. Broadly, one can identify five categories of labourers: (1) village functionaries; (2) artisans; (3) small peasants (4) kamias and (5) majurs.

Village functionaries worked either in zamindars' establishments or for the village as a whole. Though functionally different, they were zamindar's men and ultimately got paid from the village surplus. Their income came from (i) their direct allowances, cash or kind, (ii) land (free or in low rents), (iii) other customary deductions and (iv) abwabs. The relationship of these village functionaries with zamindars and ryots was complex and multifacet. The upper strata among them, while being subservient to the zamindars, often amassed wealth from the estate of their masters through illegal means. From the ryots also they appropriated rasums (shares) and abwabs, euphemistically called 'perquisites'. The lower functionaries among them, such as cropwatchers, weighmen etc, however, while sharing in all these forms of income, remained themselves appropriated and pauperised. Analytically it should be possible to distinguish the village functionaries associated primarily with control (such as patwaris, chowkidars etc) from those associated primarily with the provision of collective service (e.g., poor Barahil, crop wateher,). However, since the superior functionaries could also act as the mouthpieces of the collective interest of the village, an ambiguity in their position remains.

Artisans created the instruments of production (e.g. plough etc.) while at the same time contributing to agricultural labour. These artisans survived because of necessities for creating and maintaining (a) productive forces and (b) basic necessities of life in the village. But because of diminuation of their artisanal industries following de-industrialisation, these artisans were compelled to supplement their artisanal income by working in others farm as agricultural labour and/or leasing in small plots of land in onerous terms. Some of them like Jolahas and Nunias became virtually agricultural labour. Their allowances, both from traditional crafts, agricultural labour and other works were in grains mostly. It was determined by customs and, therefore, tended to be rigid.

Artisans' relations with their cultivator employers changed substantially, under the market influence. Earlier patron-client relationship predicated on a sense of communal identity for all conceptualised in jajmani system, were being increasingly affected by ingressing market relations. The artisans were, on the one hand, increasingly expected to become more efficient in their work and output and, on the other hand, accept payments, which were ~~often market~~ determined and less than traditional allowances. More importantly, their jajman-cultivators refused protection during economic crisis and natural calamities which were integral part of their traditional relations. The crowd of labouring classes/castes in the relief centres during such crisis testified to this changing relationship. However, the old practices like abwabs and forced labour persisted. Thus these artisans were subjected to exploitations through markets as well as pre-capitalist relations. These artisans submitted to this complex appropriation almost without protest.

Small peasant was the other category who joined the agricultural labour force. Poorly endowed with land and other instruments of labour they cultivated their tiny family plots (which included rented land) primarily through family labour, supplemented by exchange of labour. These were the preserve of natural economy, which were at various stages of 'differentiation' in late nineteenth and early twentieth century. But their subsistence farm did not provide them enough which compelled them to work in others farm during the off-season. This supplementary jobs strengthened this natural economy. Often these small cultivators were indebted. Instances were there that they paid their debts back either by working in creditors' farm or mortgaging their crops before they were ripe, suggesting linkages between labour, credit and product markets.

Fourth category of labouring class was the Kamias, or the bonded labour. The Kamias persisted because of non correspondence between various structures of North Bihar rural society in the nineteenth and early twentieth century. The slavery was made illegal long back; the law courts made any kinds of bondages void, and the Kamiauti act of 1920 made the kamia system illegal. But the upper caste landowners and cultivators who did not touch plough, wanted assured labour supply for their agricultural operation. The landless lower caste, small peasants, tribal etc. who had no or only limited opportunities to migrate elsewhere for jobs, accepted bondages in order

to protect themselves against uncertainties of agricultural work. The immediate cause of bondage was, however, the need for money for economic and social reasons by the pauperised rural poors and tribals.

Kamia's wage was lower than that of agricultural labour. It was in coarse grain. The kamias did all kinds of work, in all hours of the day and every day of the year. His wage was for wage of survival only. Loan that was given to them was to maintain his bondages. The conditions of loan payment assured their bondages.

Majurs or casual labour was the last of five major categories of labour of our study. While other forms of labour were at various stages of 'differentiation,' the casual labour was nearest to our concept of labour who had nothing but his 'labour power' to sell. Belonging to low castes, with little or no 'assets', they migrated from one area to the other for jobs. Their wages were mostly paid in kind and their 'supplements' were almost always paid in kind. Forms, modes and rates of payment of their wages varied from place to place and season to season. Local conventions and traditions contributed much to their wage determination and rigidities. The available wage data, in spite of all their frailties, showed that their nominal wages increased but their real wages decreased over fifty years from 1892 to 1941. One could take them as the final product of the system of exploitation to which all the categories of agricultural labour were subjected : When a process of colonial exploitation and predatory commercialisation had run its full course, the casual labourer could appear in his final , dispossessed incarnation. This ever swelling reserve army of labour could also act as a guarantee that the other forms of subordinate labour could obey the colonial capitalist rules of the game most of the time.

SELECTED BIBLIOGRAPHY

Data for this work have been collected from various libraries and archaives, specially Bihar State Archaives, Nationl Archaives in Delhi, India office Library, London, National Library, Calcutta, Nehru Memorial Library, Delhi, A.N. Sinha Institute of Social Science Library, Patan and U.P. Assembly Library, Lucknow.

Official and other sources from which these information have been collected are given below classified accordingl to their source of publication.

1. Publication of British India

Agricultural Statistics of India (2 Vols).

Estimates of Area and Yield of principal crops of India.

Enquiry into the Conditions of the Poorer Classes (Dufferin Committee) (1888).

The Famine Commission, (Delhi) (1881) (1898).

Moral and Material Progress Delhi (1891-92) (1901-02).

Prices and Wages in India.

Quinquennial Reports on the Average Yield Per Acre of Principal crops in India.

Royal Commission on Agriculture in India, (abridged report) and evidence volumes on Bihar.

Report of the Indian Economic Enquiry Committee (1925).

Report on the Food Grain Supply and Statistical Review of the Paddy Operation (A. P. Macdonnel).

Report on Enquiry into the Rise of Prices in India (K.L. Dutta) (1914).

Variation in Indian Price Level from 1861 to 1901 Expressed in Indian Numbers.

Census of India General Report and Bihar Vols, (1872) (1881) (1891) (1901) (1911) (1921) (1931) (1941).

2. Publication of Government of India (Post 1947)

Report (First) of the National Income Committee (1951).

Report (Final) of the National Income Committee (1954).

Report (Draft) On Paddy and Rice (D.L. Majumdar) (1951).

Report on An Enquiry into the Condition of Agricultural Workers in village Darwan (1954).

Report on Intensive Survey of Agricultural Labour (1955).

3. Publication of Government of Bengal and Bihar.

Memorandum on the material condition of the lower classes of Bengal (S. Skrine) (No Date).

Report on the Survey and Settlement operation in the Muzaffarpur District (1961).

Report on the Material Condition of the Small Agriculturists and Labouress in Gaya. (No Date).

Report on the Survey and Settlement Operation of the Narhan's Ward Estate in the Monghyr District.

Report (Final) on the Survey and Settlement operation in the District of Patna. (1915).

Report (Final) on the Survey and Settlement of the Maksudpur Estate, Gaya District.

Reports on the Land Revenue Administration of Bengal and Bihar (different volumes).

Selections from Divisional and District Annual Administration Report 1872-73 (1874).

Season and Crop Reports (Different Volumes).

Report on the Bihar and Orissa Provincial Banking Enquiry Committee (1930).

4. Government of Bihar (Post 1947)

Report on Crop Survey in Bihar (1944 to 1948) (1950).

Final Report on the Survey and Settlement operation in the District of Shahabad (1919).

5. Miscellaneous

Francis Buchanan's Account of the District of Purnea and Patna and Gaya, published by Bihar and Orissa Research Society (1928).

M. Martin, The History, Antiquities, Topography and Statistics of Eastern India reprinted by Cosmos Publication. (Delhi 1976).

District gazetteers of Bengal and Bihar.

L.S.S. O' Malley's District gazetteers of Bihar.

Proceedings of the Legislative Council of Bihar and Orissa.

6. Published Works

1. Alavi, H. 1975, "India and the colonial mode of production, Economic and Political Weekly Special Number, August.
2. Althusser, L. and Balibar E. 1968, Reading Capital, Pantheon Books.
3. Amin, S. 1984 Sugarcane and Sugar in Gorakhpur. Oxford University Press, 1984.
4. Bagchi, A. K. 1972, Private Investment in India, 1900-1932, Cambridge University Press.
5. Bagchi, A.K. 1976, "The de-industrialisation in gangetic Bihar," 1809-1901, in Essays in Honour of S.C. Sarkar, People Publishing House, New Delhi.
6. Bagchi, A.K. 1976a, De-industrialisation in the nineteenth century : some theoretical implications, The Journal of Development Studies Vol. 12, No 2, January.
7. Bagchi, A.K. 1976a, "Reflections on patterns of regional growth in India during the period of British rule," Occasional Paper No.5, Centre For Studies in Social Sciences, Calcutta.
8. Bagchi, A.K. 1979, "A Reply," The Indian Economic Social History Review, Vol. XVI, No.2, April-June.
9. Bagchi, A.K. 1982, The Political Economy of Underdevelopment Cambridge University press.
10. Banaji, J. 1976, "The peasantry in the fudal mode of production : towards an economic model," The Journal of Peasant studies, Vol 3, No. 3, April.
11. Banaji, J. 1977, "Capitalist domination and the small peasantry," Economic and Political weekly, special number, August.
12. Beidelman, Thomas O. A Comparative Analysis of the Jajmani System, Monograph of the Association for Assian studies, VIII, J-J: Augustin Incorporated publication, Locust valley, New York.

13. Bandopadhyay, S. 1985 "Caste in the perception of the Raj, A note on the evolution of colonial sociology." Bengal Bengal Past and Present, Vol C IV, Part I-II, Nos 198-199, January-December.
14. Bhattacharya. S. 1396, Aupanibeshik Bharoter Arthaniti 1850-1967 (The Economic Policy of colonial India) Anand Publishers Ltd, Calcutta.
15. Bharadwaj, K. 1974, Production Conditions in Indian Agriculture, Cambridge University Press.
16. Bloch M. 1967 "Natural economy or money economy: a pseudo dilemma," in Land and Work in Medieval Europe : selected papers (tr). by J. E. Anderson, Harper Toich Book, Routledge and Kegan Paul.
17. Bhaduri A. "Towards a theory of pre-capitalist exchange" in Ashoke Mitra (ed), Economic Theory and Planning Essays in Honour of A.K. Dasgupta, Calcutta, Oxford University Press.
18. Bhaduri, A. 1973a, "A study in agricultural backwardness under semi-feudalism" Economic Journal, 83 (1) March.
19. Bhaduri, A. 1973 b, "An analysis of semi-feudalism in Indian agriculture" Frontier 29 September.
20. Bhaduri, A and Sud, B. 1981, Class Relation and commercialisation in Indian agriculture: A study in post-Independence agrarian reform of Uttar Pradesh Trivundrum, Centre for Development Studies (mimeo).
21. Bhaduri, S. 1388 (Bengali year) Dhnorai Charit Manas Bengal Publishing Private Ltd. Calcutta.
22. Bhattacharya, N. 1985, "Agricultural labour and production : central and south-east Punjab 1870-1940, " in N. K. Raj et al. (ed), 1985, Essays on the Commercialisation of Agriculture. Oxford University Press 1985.
23. Bhatia B.H. 1967, Famine in India, Asia Publishing House, Bombay.
24. Blyn G. 1966, Agricultural Trend in India 1891-1947 : Output, Availability and Productivity University of Pennsylvania.
25. Bowley, A. D. and Robetson D. H. 1934, A Scheme for an Economic Census of India.
26. Breman, J. 1974, Patronage and Exploitation, University of California Press.

27. Brenner, R. 1987, "Agrarian class structure and economic development in Pre- industrial Europe" in Aston, T.H. and Philpin, C.H.E. (ed), The Brenner Debate, Agrarian Class Structure and Economic Development in Pre-industrial Europe, Cambridge University Press.
28. Bucharin, N. 1972, Imperialism and World Economy, Merlin Press.
29. Chattopadhyay, P. 1972a, "On the question of mode of production in Indian agriculture -A Preliminary Note" Economic and Political Weekly, Vol. VII, No. 13, 25 March.
30. Chattopadhyay, P. 1972b A-191 "Mode of production in Indian agriculture - An Anti Kritik, Economic and Political Weekly, Vol. VII, No. 53, 30 December.
31. Chattopadhyay, R. 1975, "De-industrialisation in India Re-considered", Economic and Political Weekly, Vol X, No. 12, March 22.
32. Chatterjee, P. 1984, Bengal 1920-1947, Vol. I, K.P. Bagchi & Co. Calcutta.
33. Chaudhuri, B. B. 1970 Growth of Commercial Agriculture, Indian Social and Economic History Reviews, Vol. VII No. 1 March and No. 2 June.
34. Choudhuri, B.B., '1967, "Agrarian Economy and Agrarian Relations, 1859-1889" in N.K. Sinha (ed.) History of Bengal, 1757-1907, Calcutta.
35. Chaudhuri B.B., 1969, "Agricultural Production in Bengal 1850-1900' Co-existence of Decline and Growth" Bengal Past and Present July-Dec. Section 3-3b.
36. Choudhury, B.B. 1975, "The Process of Depeasantisation in Bengal and Bihar, 1885-1947" Indian Historical Reivew July, Vol II, No. 1.
37. Choudhuri, B.B. 1975, "Process of Depeasantisation in Bengal and Bihar", Indian Historical Review Vol 2, No. 2, August.
38. Chaudhuri, B.B. 1976 "Agricultural Growth in Bengal and Bihar 1770-1860" Bengal Past and Present, Vol XCV, Part 1, No. 180, January-June.
39. Choudhury, B.B. 1977, "Movement of Rent in Eastern India, 1793-1930," Indian Historical Review, January, 1977, Vol III, Vol 2.
40. Chowdhury, B.B. 1982 "Eastern India" in Dharma Kumar, and Meghand Desai (ed), The Cambridge Economic History of India, Vol. III, Orient Longman.

41. Charlesworth N. 1979, 'Trends in Agricultural Performance of An Indian Province : The Bombay Presidency, 1900-1920', in K.N. Chaudhuri and C.J. Dewey (eds) Economy and Society Oxford University Press Bombay.
42. Charlesworth, N. 1985, British Rule and the Indian Economy 1800-1914, Macmillan, London.
43. Colebrook, H.T. 1804, Remark on the Husbandry and Internal Commerce of Bengal, Calcutta, reprinted, Statemen, Steam Printing Works, Chowringhee.
44. C.R.M. 1879, "Notes on the Ryot of Bihar," Calcutta Review, Vq LXIX.
45. C.S.B. 1879, The Primitive Races, Vol 69, No. 138.
46. Daniel, T. 1962, "Economic Concepts in the Census of India", in Thorner, D and A, (ed..) Land and Labour in India .
47. Desai, A. V. 1978, "Revenue Administration and Agricultural Statistic in Bombay Presidency" Indian Economic and Social History Review, Vol XV, No 2, April-January.
48. Dewey C. 1974, "The Agricultural Statistics of The Punjab, 1887-1947", Bulletin On Quantitative and Computer Method in South Asian Studies, No. 2, March.
49. Dewey, C. "Patwari and Zamindar : sub-ordinate officials and the reliability of Indian agricultural statistics," in Dewey, C. and Hopkin, A.G. Imperial Impact, London.
50. Dumount, L 1972, Homo Hierarchicus, Paladin, London.
51. Finley, M.I. 1964, "Between Slavery and Freedom" Comparative Study In Society and History, Vol VI, No.3, April.
52. Geddes, A. 1936, "The Population of Bengal, Its Distribution and Changes : A Contribution to Geographical Method," Geographical Journal, Vol LXXXIX, No.4, April.
53. Geddes, A., 1942, "The Population of India, Variability of Change as a Regional Demographic Index," Geographical Review, VOL XXXII, Oct, No.4.
54. Geddes, A., 1982, Man and Land In South Asia, Concept Publishing Co. New Delhi.
55. Ghosh S. K., 1984, "Marx On India," Monthly Review, January.

56. Ghurye, G.S. 1950, Caste and Class in India, Popular Book, Bombay.
57. Ghosh A and Dutta, K. 1977, Development of Capitalist Relation in Agriculture (A Case Study of West Bengal 1793-1971) Peoples Publishing House, New Delhi.
58. Gough, K. 1960 "The Hindu Jajmani System" Economic Development and Cultural Change, Vol IX, No. 1 Part 1, October.
59. Gough, K. 1960a, "Review of T. O. Beidelman, "A Comparative Analysis of the Jajmani System," Economic Development and Cultural Change, Vol IX.
60. Grierson G. A. 1883, Notes On the District of Gaya, Bengal Secretariat Press.
61. Grierson G.A. 1885, Bihar Peasant Life reprinted by Cosmos Publication in Delhi 1975.
62. Guha R. 1963, A Rule of Property for Bengal, Moulton, Paris.
63. Guha, S. 1985, Agrarian Economy of the Bombay Decan 1818-1914, Oxford University Press. Delhi.
64. Heston, A. 1968, Official Yields per Acre in India, 1836-1947, Some questions of Interpretations", Indian Economic and Social History Review, Vol 10.
65. Heston, A, 1973, "Official Yields per Acre in India, 1886-1947, some Questions of Interpreation Indian Economic and Social History Review Vol XV, No. 2.
66. Habib I. No Date, "Potentialities for Capitalist Development in the Economy of Mughal India", Enquiry 4.
67. Harrison, F.C. 1890 "The Bihar Ryot at Home" Calcutta Review, Vol 90, No. 182.
68. Harris, J. 1980, "Contemporary Marxist Analysis of the Agrarian Question in India", Working Paper 14, Madras Institute of Development Studies, (Mimeo).
69. Harris, J., The Mode of Production Controversy, Themes and Problem of the Debate, Working paper No. 6, Madras Institute of Development Studies, Madras.
70. Hubback, J. A. 1921, Sampling For Rice Yield in Bihar and Orissa, Bulletin No. 166, Agricultural Research Institute, Pusa, reprinted in Sankhya, Part 3, Vol.7.

71. Hunter W.W., 1976, A Statistical Account of Bengal, London, reprinted by Concept Publishing Company, New Delhi.
72. Islam, M. M. 1978, Bengal Agriculture, 1920 to 1946 - A Quantitative Analysis, Cambridge University Press, published in India by S. Chand & Co. New Delhi.
73. Jather, G. B. and Beri, S. G. 1949, Indian Economics Oxford University Press.
74. Kessinger, T. 1975 "The Peasant Farm in North India 1848-1969" Exploration in Economic History No. 12.
75. Kessinger, T. 1979, Vilayatpur, 1848-1968, Young Asia 1979.
76. Kosambi, D.D. 1956, An Introduction to the Study of Indian History, Popular Book Depot, Bombay.
77. Krishnamurthy, J. 1972 "The Growth of Agricultural Labour In India - A Note, The Indian Economic and Social History Review, vol IX, No.3, September.
78. Krishnamurthy, J. 1976 "De-industrialisation Revisited" Economic and Political Weekly, vol XI, No. 26 June 26.
79. Krishnamurthy, J. "De-industrialisation in Gangetic Bihar, A Case Study of the Cotton Textile Industry, 1809-1898", The Indian Economic and Social History Review.
80. Kula V. 1976, An Economic Theory of the Feudal System, New Left Book.
81. Kumar, D., 1965, Land and Caste in South India, Agricultural Labour in Madras Presidency in the 19th century Cambridge University Press, London.
82. Kumar D. and Desai, M. (ed), 1982, The Cambridge History of India, Vol II, Orient Longman Delhi.
83. Lenin, V.I. 1964, The Development of Capitalism in Russia Collected Works, Vol. 3, Progress Publishers, Moscow.
84. Lenin, V.I. 1972, "What the 'Friends of the People' Are?" Collected Works, Progress Publishers, Moscow.
85. Lenin V.I. 1977 Imperialism, The Highest Stage of Capitalism, Collected Works Vol 22, Progress Publishers, Moscow.
86. Luxemburg, R. 1951, The Accumulation of Capital, Modern Reader (paper backs).
87. Lord Meston, 1933, 'Statistics in India' Journal of the Royal Statistical Society, XC VI.

88. Mao Ze-dong, 1968, Four Essays on Philosophy, Foreign Language Press, Peking.
89. Marx, K. 1981, Capital, Vol 1, Penguin Books.
90. Marx, K. 1976, Capital, Vol 3 Penguin.
91. Marx, K. and Engels, F. 1945, Correspondence, 1846-1895. A Selection with Commentary and Notes, National Book Agency, Calcutta.
92. Marx, K and Engels, F. (No Date), On Colonialism, Progress Publishers, Moscow.
93. Mishra, S.C. 1982, "Commercialisation, Peasant Differentiation and Merchant Capital in Late 19th Century Bombay and Punjab," Journal of Peasant Studies, Vol 10 No.1, October.
94. Mishra S.C. 1983a, "On the Reliability of Pre-Independence Agricultural Statistics in Bombay and Punjab", The Indian Economic and Social History Review, No.2, June-Sept.
95. Mishra S. 1985, "Agricultural Trends in Bombay Presidency, 1900-1920, The Illusion of Growth", Modern Asian Studies Vol. 19 No. 4.
96. Mishra S, Pattern of Long Term Agrarian Change in Bombay and Punjab 1881-1972, Thesis submitted to the Cambridge University (unpublished).
97. Mukherjee K, (No date), 1965, Levels of Economic Activity and Public Expenditure in India, Poona.
98. Narain D. 1967, 'Agricultural Change in India', Economic and Political Weekly, February Vol II, No.6.
99. Neale, W. 1962, Economic Change in Rural India, Tenure and Reform in Uttar Pradesh, 1800-1955, Yale University Press.
100. Neale, W. "Reciprocity and Redistribution in the Indian Village", Karl Polany, et al. Trade and Market in the Early Empire, The Free Press, Glencoe, Illinois, The Falcon Publishing Press.
101. Patnaik, U., 1971 'Capitalist Development in Agriculture: A Note,' Economic and Political Weekly, Vol. No. 39, September.
102. Patnaik U., 1972a "Development of Capitalism in Agriculture-I", Social Scientist, Vol I, No.2, September.
103. Patnaik, U., 1972b "Mode of Production in Indian Agriculture", Economic and Political Weekly, Vol VII, No. 40, 30 September.

104. Patnaik U., 1972c, "Development of Capitalism in Agriculture-II" Social Scientist Vol I. No.3 October.
105. Patnaik, U., "Class Differentiation within the Peasantry : An Approach to Analysis of Indian Agriculture", Economic and Political Weekly, Review of Agriculture, September, 25.
106. Patnaik U. 1981, Process of Commercialisation under Colonial Condition, Centre for Development Studies, Trivandrum, November (mimeograph).
107. Pandian, M.S.S.1990, The Political Economy of Agrarian Change, Nanchil Nadu, 1688-1939, Sage Publication.
108. Panse V.G. 1952, "A Trend of Areas and Yield of Principal Crops In India, Agricultural Situation in India, Vol. VII.
109. Patel, S. J. 1952, Agricultural Labour in Modern India and Pakistan, Current Book House.
110. Prasad P. H., 1974, "Reactionary Role of Usurious Capital in Rural India", Economic and Political Weekly special number, August.
111. Pradhan H. P. 1973, "Production Relations Achillis Heel of Indian Planning", Economic and Political Weekly, Vol VIII, No.9, Special Number.
112. Risley, H. H., 1981, The Tribe and Caste of Bengal, Firma Mukhopadhyay, Calcutta.
113. Mukherjee S. Agricultural Marketing in a Colonial setting (Rice and Jute in Bengal 1900-1921. Trade, production, consumption and price), Ph.D. thesis submitted in Jadavpur University.
114. Mukherjee, S. 1986a, "Agricultural class formation in modern Bengal 1931-51", Economic and Political Weekly, January, 6.
115. Rao, R. S. 1990 "In Search of the Capitalist Farmer — Comment" in Patnaik, U. Agrarian Relations and Accumulation - The Mode of Production Debate in India, Oxford University Press.
116. Rubin I.I. 1973, Essays on Marx's Theory of Value Black Rose, Montreal.
117. Rudra, A. 1970, "In Search of the Capitalist Farmer" Economic and Political Weekly, Vol V, No. 26, June 27.
118. Saith, A., 1978 Agrarian Structure Technology and Marketed Surplus in the Indian Economy, Unpublished Ph. D. thesis submitted to the University of Cambridge.

119. Sarkar, S., 1983, Modern India, 1885-1847, Macmillen, New Delhi.
120. Sau, R., 1976, "Can Capitalism Develop In Indian Agriculture" Economic and Political weekly, Vol-VIII. No. 13, March 31.
121. Sharma, R.S. 1980, Indian Feudalism, Macmillan of India Ltd.
122. Singh, A.P. 1939, Rahulji Ka Apradh (The Crime of Mr. Rahul) Patna.
123. Srinivasan, M.N 1966, Social Change in Modern India, University of California Press.
124. Stokes, E. 1969, The English Utilitarians and India, Oxford University Press.
125. Subramaniam, S, 1945, Production and Prices Guide to Current Official Statistics, Vol I, 3rd edition.
126. Thakur U. 1958 "Some aspects of slavery in Mithila in the 17th centuries" Journal of Bihar Research Society, Vol. XLIV, September, - December, Part III + IV.
127. Thomas P.J. and Shastri N.S.R. 1939, Indian Agricultural Statistics, University of Madras.
128. Thompson, E.P. 1968, The Making of the English Working Class, Penguin.
129. Thorner, D. 1950, Investment in Empire, British Railway and Steam Shipping Enterprise in India University of Pennsylvania Press.
130. Thorner, D., "Economic concepts in the census of India" in Thorner, D. and A. (ed.), Land and Labour in India, Asia Publishing House, Bombay, 1962.
131. Wilson, H.H. Glossary of Judicial and Revenue Terms, 1855, London, reprinted by Munshiram Manoharlal, Delhi, 1968.
132. Whitcombe, E., 1971, Agrarian Conditions in Northern India, The United Provinces under British Rule, 1860-1900, Oxford University Press.
133. Wiser, W.W., The Hindu Jajmani System Lucknow Publishing House, 1936.

APPENDIX II

AUTUMN RICE

NORTH BIHAR

	Output (Tons)	Area (acre)	YEILD	LBS
1900-1				728
1901-2	453806	1395100		728
1902-3	397412	1221900		730
1903-4	429204	1316000		728
1904-5	435042	1338100		730
1905-6	415663	1275350		728
1906-7	408240	1255300		729
1907-8	428634	1316800		727
1908-9	397376	1224000		759
1909-10	472230	1392600		728
1910-11	486334	1494800		730
1911-12	449116	1376400		671
1912-13	423434	1411900		706
1913-14	462389	1466600		869
1914-15	401678	1035000		772
1915-16	531268	1540800		689
1916-17	434300	1410900		718
1917-18	457938	1428400		651
1918-19	406180	1396500		621
1919-20	390043	1406500		709
1920-21	444117	1402300		611
1921-22	385539	1413300		646
1922-23	395783	1371300		531
1923-24	310553	1309500		686
1924-25	364879	1190300		579
1925-26	304859	1178400		580
1926-27	289305	1116200		635
1927-28	324553	1143600		523
1928-29	347035	1484300		673
1929-30	357862	1191100		551
1930-31	174323	708600		668
1931-32	279826	937455		453
1932-33	154072	761200		410
1933-34	144406	788900		428
1934-35	151038	790400		436
1935-36	144486	741300		476
1936-37	164728	773900		474
1937-38	166159	784800		226
1939-40	119796	1182700		317
1940-41	105633	744500		421
1941-42	128357	682200		

AUTUMN RICE

PATNA DIVISION

	Output (Tons)	Area (acre)	YEILD	LBS
1900-1				
1901-2	15400	55000		627
1902-3	21504	76800		627
1903-4	8960	32000		627
1904-5	16324	58300		627
1905-6	11676	41700		627
1906-7	18984	67800		627
1907-8	19488	69600		627
1908-9	17976	64200		627
1909-10	18620	66500		627
1910-11	20692	73900		627
1911-12	17668	63100		627
1912-13	17821	67400		592
1913-14	22705	90300		563
1914-15	21793	86400		565
1915-16	31075	85800		811
1916-17	23453	78100		672
1917-18	21378	84400		567
1918-19	11464	71100		361
1919-20	11948	68300		391
1920-21	12783	67900		421
1921-22	16915	68700		551
1922-23	11137	65400		381
1923-24	11386	67200		379
1924-25	10050	58200		386
1925-26	15037	67500		499
1926-27	6563	49400		297
1927-28	9960	52800		422
1928-29	11833	56600		468
1929-30	14686	59200		555
1930-31	14203	57600		552
1931-32	13406	57800		519
1932-33	11786	57900		455
1933-34	10539	60000		393
1934-35	12555	63200		444
1935-36	9333	58700		356
1936-37	11640	60500		430
1937-38	11526	56500		456
1939-40	11183	57400		436
1940-41	11452	61900		414
1941-42	11909	67400		395

AUTUMN RICE

T.DIVISION

	Output (Tons)	Area (acre)	YEILD	LBS
1900-1				
1901-2	162758	478700		761
1902-3	161092	473800		761
1903-4	159188	468200		761
1904-5	156094	459100		761
1905-6	156723	460950		761
1906-7	157352	462800		761
1907-8	175034	515600		760
1908-9	140488	413200		761
1909-10	177386	462900		858
1910-11	186218	547700		761
1911-12	190264	559600		761
1912-13	178893	556200		720
1913-14	231335	598400		865
1914-15	202898	586200		775
1915-16	172970	602400		643
1916-17	183323	507400		809
1917-18	221872	601400		826
1918-19	208906	591800		790
1919-20	188882	611000		692
1920-21	218743	600600		815
1921-22	224932	605300		832
1922-23	171220	604600		634
1923-24	121647	541100		503
1924-25	162860	502700		725
1925-26	141412	486000		651
1926-27	142764	465700		686
1927-28	139785	465000		673
1928-29	175475	568800		691
1929-30	157672	472900		746
1930-31	11972	436700		61
1931-32	97644	420600		520
1932-33	80375	404500		445
1933-34	76549	409000		419
1934-35	78117	396700		441
1935-36	84888	408300		465
1936-37	89834	396800		507
1937-38	95357	406800		525
1939-40	62359	811600		172
1940-41	38336	405700		211
1941-42	79154	406200		436

AUTUMN RICE

BHAGALPUR DIVISION

	Output (Tons)	Area (acre)	YEILD	LBS
1900-1				
1901-2	275648	861400		716
1902-3	214816	671300		716
1903-4	261056	815800		716
1904-5	262624	820700		716
1905-6	247264	772700		716
1906-7	231904	724700		716
1907-8	234112	731600		716
1908-9	238912	746600		716
1909-10	276224	863200		716
1910-11	279424	873200		716
1911-12	241184	753700		716
1912-13	226720	788300		644
1913-14	208349	777900		599
1914-15	176987	362400		1093
1915-16	327223	852600		859
1916-17	227524	825400		617
1917-18	214688	742600		647
1918-19	185810	733600		567
1919-20	189213	727200		582
1920-21	212591	733800		648
1921-22	143692	739300		435
1922-23	213426	701300		681
1923-24	177520	701200		567
1924-25	191969	629400		683
1925-26	148410	624900		531
1926-27	139978	601100		521
1927-28	174808	625800		625
1928-29	159727	858900		416
1929-30	185504	659000		630
1930-31	148148	214300		1548
1931-32	168776	459055		823
1932-33	61911	298800		464
1933-34	57318	319900		401
1934-35	60366	330500		409
1935-36	50265	274300		410
1936-37	63254	316600		447
1937-38	59276	321500		412
1939-40	46254	313700		330
1940-41	55845	276900		451
1941-42	37294	208600		400

RICE NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	2786316	9516700		655
1893_94	2929164	9973500		657
1894_95	2952100	9978100		662
1895_96	2851788	9978200		640
1896_97	2751473	9200000		669
1897_98	2955802	9988900		662
1898_99	2879281	9743000		661
1899_1900	2808612	9544900		659
1900_01	2427060	8194600		663
1901_02	1840831	6921300		595
1902_03	3970814	7792900		1141
1903_04	2840766	6701400		949
1904_05	3339435	7710900		970
1905_06	4387153	9029800		1088
1906_07	2036157	7014100		650
1907_08	2085814	7111400		657
1908_09	666005	4616200		323
1909_10	8961455	7330100		2738
1910_11	3263918	6400000		1142
1911_12	4063795	6982400		1303
1912_13	2253411	6809900		741
1913_14	3773777	6905000		1224
1914_15	2132704	6781700		704
1915_16	3487614	7045400		1108
1916_17	4135744	7300300		1268
1917_18	3665938	6730300		1220
1918_19	1920316	6339300		678
1919_20	3095091	6368300		1088
1920_21	1745835	6189500		631
1921_22	2432526	6229100		874
1922_23	3015312	6412600		1053
1923_24	1738137	5386600		722
1924_25	2593060	6399500		907
1925_26	2125998	6046600		787
1926_27	1964147	5821000		755
1927_28	2081073	5728100		813
1928_29	2031073	5896700		771
1929_30	2498448	6093800		918
1930_31	2075623	5838600		796
1931_32	2565680	6080000		945
1932_33	1358625	5393700		564
1933_34	1746795	5741400		681
1934_35	1955126	6022900		727
1935_36	1290214	5402100		534
1936_37	1773758	5763900		689
1937_38	1598864	5265100		680
1938_39	1410860	5340500		691
1939_40	1641278	5371100		684
1940_41	1012948	5059300		443
1941-42	1012948	5059300		448

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	724176	2586500		627
1893_94	754570	2695500		627
1894_95	754899	2696100		627
1895_96	751505	2645400		636
1896_97	748110	2636500		635
1897_98	840993	3040200		619
1898_99	835595	3020200		619
1899_1900	819234	2956400		620
1900_01	535885	1953900		614
1901_02	654679	2228100		658
1902_03	1330166	2655400		1122
1903_04	791744	1900200		933
1904_05	1107135	2743600		903
1905_06	1389950	2825400		1101
1906_07	1111096	2760800		901
1907_08	596825	2503300		534
1908_09	253711	1645900		345
1909_10	1355883	2574900		1179
1910_11	1340297	2543900		1180
1911_12	1326583	2465400		1205
1912_13	577281	2322400		556
1913_14	1137851	2086400		1221
1914_15	719851	2025400		796
1915_16	1009069	2032300		1112
1916_17	1356053	2083600		1457
1917_18	1255840	1947200		1444
1918_19	444209	1575900		631
1919_20	1110188	1747300		1423
1920_21	621873	1734900		802
1921_22	652023	1730800		843
1922_23	997563	1887000		1184
1923_24	657680	1812200		812
1924_25	728603	1816400		898
1925_26	585120	1734100		755
1926_27	543114	1584000		768
1927_28	523649	1566500		748
1928_29	523649	1584900		740
1929_30	733319	1722500		953
1930_31	702162	1738700		904
1931_32	697968	1746500		895
1932_33	485025	1748600		621
1933_34	562001	1739200		723
1934_35	603444	1755400		770
1935_36	326049	1571700		464
1936_37	504901	1630100		693
1937_38	458217	1449100		708
1938_39	429571	1496300		643
1939_40	513213	1612900		712
1940_41	298755	1493300		448
1941-42	298755	1493300		448

RICE

TIRHUT DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
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1892_93	1005993	3592700	627
1893_94	966503	3483800	621
1894_95	996154	3512900	635
1895_96	948880	3548700	598
1896_97	901604	3108800	649
1897_98	908738	3164400	643
1898_99	921717	3219300	641
1899_1900	910435	3226700	632
1900_01	850570	2997300	635
1901_02	504284	2353300	480
1902_03	1268252	2485500	1142
1903_04	1115995	2429700	1028
1904_05	1060235	2547200	932
1905_06	1371662	3004900	1022
1906_07	499986	2560300	437
1907_08	818024	2526600	725
1908_09	228390	1717300	297
1909_10	6426607	2658100	5415
1910_11	1042735	2314600	1009
1911_12	1501146	2354300	1428
1912_13	753250	2233300	755
1913_14	1461461	2610300	1254
1914_15	841228	2576300	731
1915_16	1257967	2787700	1010
1916_17	1471652	2828000	1165
1917_18	1396039	2825200	1106
1918_19	976441	2627300	832
1919_20	986710	2702200	817
1920_21	593215	2584100	514
1921_22	956995	2532900	846
1922_23	1178648	2516100	1049
1923_24	752075	2235100	753
1924_25	1128429	2640600	957
1925_26	948062	2587300	820
1926_27	935465	2547300	822
1927_28	896434	2576500	779
1928_29	846434	2505600	756
1929_30	1142550	2613600	979
1930_31	838631	2416500	777
1931_32	1168477	2504000	1045
1932_33	459187	2054000	500
1933_34	613392	2173900	632
1934_35	850204	2435500	781
1935_36	559356	2142300	584
1936_37	763820	2333600	733
1937_38	697174	2172700	718
1938_39	593730	2222400	598
1939_40	711068	2200500	723
1940_41	445341	2126100	469
1941-42	445341	2126100	469

RICE	BHAGALPUR DIVISION			
YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	1056147	3337500		708
1893_94	1208091	3794200		713
1894_95	1201047	3769100		713
1895_96	1151403	3784100		681
1896_97	1101759	3454700		714
1897_98	1206071	3784300		713
1898_99	1121969	3503500		717
1899_1900	1078943	3361800		718
1900_01	1040605	3243400		718
1901_02	681868	2339900		652
1902_03	1372396	2652000		1159
1903_04	933027	2371500		881
1904_05	1172065	2420100		1084
1905_06	1625541	3199500		1138
1906_07	425075	1693000		562
1907_08	670965	2081500		722
1908_09	183904	1253000		328
1909_10	1178965	2097100		1259
1910_11	880886	1541500		1280
1911_12	1236066	2162700		1280
1912_13	922880	2254200		917
1913_14	1174465	2208300		1191
1914_15	571625	2180000		587
1915_16	1220578	2225400		1228
1916_17	1308039	2388700		1226
1917_18	1014059	1957900		1160
1918_19	499666	2136100		523
1919_20	998193	1918800		1165
1920_21	530747	1870500		635
1921_22	823508	1965400		938
1922_23	839101	2009500		935
1923_24	328382	1339300		549
1924_25	736028	1942500		848
1925_26	592816	1725200		769
1926_27	485568	1689700		643
1927_28	660990	1585100		934
1928_29	660990	1806200		819
1929_30	622579	1757700		793
1930_31	534830	1683400		711
1931_32	699235	1829500		856
1932_33	414413	1591100		583
1933_34	571402	1828300		700
1934_35	501478	1832000		613
1935_36	404809	1688100		537
1936_37	505037	1800200		628
1937_38	443473	1643300		604
1938_39	387559	1621800		535
1939_40	416997	1557700		599
1940_41	268852	1439900		418
1941_42	268852	1439900		418

Maize

NORTH BIHAR

Year	OUTPUT	AREA	YEILD	lbs
1892_93	624552	1529200		914
1893_94	619610	1522900		911
1894_95	628631	1531800		919
1895_96	629624	1530300		921
1896_97	605051	1486300		911
1897_98	668058	1616000		926
1898_99	614405	1460200		942
1899_1900	545162	1263900		966
1900_01	590935	1412100		937
1901_02	445062	1454900		685
1902_03	436234	1357300		719
1903_04	324543	1229500		591
1904_05	334392	1304100		574
1905_06	475857	1290100		826
1906_07	453652	1240400		819
1907_08	465682	1259600		828
1908_09	452621	1223300		828
1909_10	432776	1304200		743
1910_11	464905	1258500		827
1911_12	385846	1123600		769
1912_13	433375	1322300		734
1913_14	388641	1316200		661
1914_15	329375	1087600		578
1915_16	378252	1235500		685
1916_17	352483	1187400		664
1917_18	388698	1257800		692
1918_19	367354	1338200		614
1919_20	415478	1377500		675
1920_21	482302	1353000		798
1921_22	471214	1369800		770
1922_23	285353	1231400		519
1923_24	369203	1251200		660
1924_25	180875	1133000		357
1925_26	341800	1212300		631
1926_27	381852	1200900		712
1927_28	421107	1238200		761
1928_29	326463	1236700		591
1929_30	444712	1274100		781
1930_31	400703	1208600		742
1931_32	399034	1273600		701
1932_33	349012	1408400		555
1933_34	272485	1279800		476
1934_35	330510	1237100		598
1935_36	338817	1346700		563
1936_37	337186	1249200		604
1937_38	309547	1168300		593
1938_39	231690	1135500		457
1939_40	321244	1094600		657
1940_41	278622	1024300		609

1940_41 278622 1024300 609

MAIZE

PATNA DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	95584	218200		981
1893_94	79202	183400		967
1894_95	94738	211800		1001
1895_96	94507	210300		1006
1896_97	94277	210300		1004
1897_98	97905	222200		986
1898_99	94985	212700		1000
1899_1900	77181	167900		1029
1900_01	93915	212000		992
1901_02	58127	213200		610
1902_03	55225	217600		568
1903_04	40886	183000		500
1904_05	32948	212000		348
1905_06	76368	210400		813
1906_07	81733	220900		828
1907_08	79328	214400		828
1908_09	85914	232200		828
1909_10	83953	226900		828
1910_11	79883	215900		828
1911_12	50281	213800		526
1912_13	48785	195200		559
1913_14	20344	167600		271
1914_15	41414	167900		552
1915_16	58813	180000		731
1916_17	44897	175000		574
1917_18	32222	173500		416
1918_19	25674	145700		394
1919_20	32985	162400		454
1920_21	31391	139200		505
1921_22	38037	150700		565
1922_23	24761	133800		414
1923_24	21471	132000		364
1924_25	9747	95500		228
1925_26	28565	115800		552
1926_27	17552	94600		415
1927_28	26262	116300		505
1928_29	30031	118500		567
1929_30	38855	143300		607
1930_31	34684	141000		551
1931_32	38054	142800		596
1932_33	35209	139700		564
1933_34	32958	134800		547
1934_35	28462	113200		563
1935_36	24538	122100		450
1936_37	26337	120700		488
1937_38	30812	132600		520
1938_39	28863	129700		498
1939_40	29061	127600		510
1940_41	28552	136700		467
1941-42	28552	136700		467

MAIZE

TIRHUT DIVISION

Year	OUTPUT	AREA	YEILD	lbs
1892_93	291754	651500		1003
1893_94	300741	673300		1000
1894_95	301693	676400		999
1895_96	303044	676200		1003
1896_97	279193	634200		986
1897_98	337441	748500		1009
1898_99	324317	721200		1007
1899_1900	280201	590300		1063
1900_01	304674	682600		999
1901_02	239531	718700		746
1902_03	204186	617000		741
1903_04	174444	579300		674
1904_05	155790	617500		565
1905_06	225737	610100		828
1906_07	218295	603500		810
1907_08	226847	613100		828
1908_09	223147	603100		828
1909_10	237207	640500		829
1910_11	230473	624900		826
1911_12	243969	631600		865
1912_13	264648	803200		738
1913_14	227906	711300		717
1914_15	208214	587300		794
1915_16	155174	672200		517
1916_17	205764	684600		673
1917_18	270491	753000		804
1918_19	236858	747800		709
1919_20	236694	750300		706
1920_21	252171	797000		708
1921_22	250263	821300		682
1922_23	176047	771100		511
1923_24	242061	771000		703
1924_25	114933	709900		362
1925_26	232914	688900		757
1926_27	232632	729400		714
1927_28	237064	728400		729
1928_29	195788	744700		588
1929_30	261305	728100		803
1930_31	217379	707600		688
1931_32	252259	735100		768
1932_33	189804	757100		561
1933_34	130485	652000		448
1934_35	190170	672100		633
1935_36	171243	647800		592
1936_37	169915	647800		587
1937_38	170850	584100		655
1938_39	95375	553600		385
1939_40	160637	525200		685
1940_41	156706	501700		699
1941_42	156706	501700		699

Maize

BHAGALPUR DIVISION

Year	OUTPUT	AREA	YEILD	lbs
1892_93	237214	659500		805
1893_94	239667	666200		805
1894_95	232200	643600		808
1895_96	232073	643800		807
1896_97	231581	641800		808
1897_98	232712	645300		807
1898_99	195103	526300		830
1899_1900	187780	505700		831
1900_01	192346	517500		832
1901_02	147404	523000		631
1902_03	176823	522700		757
1903_04	109213	467200		523
1904_05	145654	474600		687
1905_06	173752	469600		828
1906_07	153624	416000		827
1907_08	159507	432100		826
1908_09	143560	388000		828
1909_10	111616	436800		572
1910_11	154549	417700		828
1911_12	91596	278200		737
1912_13	119942	323900		829
1913_14	140391	437300		719
1914_15	79747	332400		537
1915_16	164265	383300		959
1916_17	101822	327800		695
1917_18	85985	331300		581
1918_19	104822	444700		527
1919_20	145799	464800		702
1920_21	198740	416800		1068
1921_22	182914	397800		1029
1922_23	84545	326500		580
1923_24	105671	348200		679
1924_25	56195	327600		384
1925_26	80321	407600		441
1926_27	131668	376900		782
1927_28	157781	393500		898
1928_29	100644	373500		603
1929_30	144552	402700		804
1930_31	148640	360000		924
1931_32	108721	395700		615
1932_33	123999	511600		542
1933_34	109042	493000		495
1934_35	111878	451800		554
1935_36	143036	576800		555
1936_37	140934	480700		656
1937_38	107885	451600		535
1938_39	107452	452200		532
1939_40	131546	441800		666
1940_41	93364	385900		541
1940_41	93364	385900		541

WHEAT

NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	270675	988500		613
1893_94	291761	1059000		617
1894_95	278685	1017200		613
1895_96	796331	1034300		1724
1896_97	293883	1059200		621
1897_98	309558	1102700		628
1898_99	316559	1133200		625
1899_1900	310062	1104800		628
1900_01	318971	1114900		640
1901_02	244902	956100		573
1902_03	378013	943153		897
1903_04	372748	1091600		764
1904_05	324232	1072500		677
1905_06	359919	1052100		766
1906_07	418704	1223100		766
1907_08	262277	943800		622
1908_09	309806	1171700		592
1909_10	629622	1314600		1072
1910_11	1278648	1266100		2262
1911_12	448506	1233100		814
1912_13	498929	1241500		900
1913_14	569783	1307900		975
1914_15	331566	1192500		622
1915_16	534247	1303800		917
1916_17	508378	1291100		882
1917_18	382425	1152500		743
1918_19	304175	961700		708
1919_20	423526	1112600		852
1920_21	410619	1075400		855
1921_22	458410	1101900		931
1922_23	504399	1233000		916
1923_24	431553	1170400		825
1924_25	432722	1137600		852
1925_26	405013	1121800		808
1926_27	443681	1145700		867
1927_28	390906	1170200		748
1928_29	459659	1173100		877
1929_30	462469	1163300		890
1930_31	417220	1183500		789
1931_32	381860	1186700		720
1932_33	431432	1200900		804
1933_34	415184	1179700		788
1934_35	430602	1161200		830
1935_36	367568	1114200		738
1936_37	375374	1082700		776
1937_38	382108	1075500		795
1938_39	353036	1077500		733
1939_40	369686	1112000		744
1940_41	352855	1072000		737
1941_42	352855	1072000		737

WHEAT

PATHA DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	94419	323500		653
1893_94	108403	361600		671
1894_95	101842	342400		666
1895_96	358200	360300		2223
1896_97	113395	387700		655
1897_98	109743	368600		666
1898_99	110577	371600		666
1899_1900	108011	360400		671
1900_01	131437	418700		703
1901_02	80150	323400		555
1902_03	143498	282653		1137
1903_04	154163	408900		844
1904_05	114096	405200		630
1905_06	115813	392100		661
1906_07	153258	454600		755
1907_08	55206	303100		407
1908_09	69170	364000		425
1909_10	174741	484800		807
1910_11	918498	499000		4123
1911_12	180073	444500		907
1912_13	145961	396800		823
1913_14	229758	471730		1091
1914_15	105091	374700		628
1915_16	200266	440600		1018
1916_17	182491	415500		983
1917_18	167323	399300		938
1918_19	70853	250400		633
1919_20	163251	414500		882
1920_21	136340	358700		851
1921_22	152542	382600		893
1922_23	172872	443200		873
1923_24	165872	430400		863
1924_25	160881	402100		896
1925_26	158402	401900		882
1926_27	165208	478400		884
1927_28	116106	420000		619
1928_29	157250	448100		786
1929_30	160402	434600		826
1930_31	137292	434200		708
1931_32	160932	437400		824
1932_33	152002	445800		763
1933_34	153156	446800		767
1934_35	158806	448400		793
1935_36	129195	426700		678
1936_37	147267	428700		769
1937_38	143579	426000		754
1938_39	131114	429500		683
1939_40	131458	423300		695
1940_41	133596	433800		689
1941-42	133596	433800		689

WHEAT

TIRHUT DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	110657	365500		678.
1893_94	111556	369100		677
1894_95	106201	353000		673
1895_96	312093	355600		1965
1896_97	110488	349500		708
1897_98	131769	422500		698
1898_99	133779	428600		699
1899_1900	131485	420300		700
1900_01	115336	374100		690
1901_02	62327	305500		456
1902_03	108026	326300		741.
1903_04	104746	334600		701.
1904_05	95551	341800		626
1905_06	127341	329700		865
1906_07	105492	331500		712
1907_08	94455	287400		736
1908_09	87917	340800		377
1909_10	200274	366000		1225
1910_11	174461	359900		1085
1911_12	173011	359100		1079
1912_13	168622	385400		980
1913_14	168121	390500		964
1914_15	113044	374900		675
1915_16	164391	401700		916
1916_17	177920	412400		966
1917_18	130343	434500		671
1918_19	144369	401800		804
1919_20	137957	397400		777
1920_21	159807	414000		864
1921_22	175225	416500		942
1922_23	189341	419300		1011
1923_24	158073	412800		857
1924_25	172553	397000		973
1925_26	146579	390000		841
1926_27	159656	400600		892.
1927_28	172323	420700		917
1928_29	175031	397300		986.
1929_30	175136	402100		975.
1930_31	161692	410200		882.
1931_32	149617	411700		814.
1932_33	161783	413000		877.
1933_34	145822	394300		828.
1934_35	152845	373300		917.
1935_36	131024	358100		819.
1936_37	128780	356800		808.
1937_38	141311	351700		900.
1938_39	125585	346300		812.
1939_40	148582	398200		835.
1940_41	130050	349300		833.
1941-42	130050	349300		833

WHEAT

BHAGALPUR DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	65599	299500		490
1893_94	71802	328300		489
1894_95	70642	321800		491
1895_96	126038	317900		888
1896_97	70000	322000		486
1897_98	68041	311600		489
1898_99	72203	333000		485
1899_1900	70566	324100		487
1900_01	72198	322100		502
1901_02	102425	327200		701
1902_03	126489	334200		847
1903_04	113839	348100		732
1904_05	114585	325500		788
1905_06	116760	330300		791
1906_07	159954	437000		819
1907_08	112616	353300		714
1908_09	152719	466900		732
1909_10	254607	463800		1229
1910_11	185689	407200		1021
1911_12	95422	429500		497
1912_13	184346	459300		899
1913_14	171904	445700		863
1914_15	113431	442900		573
1915_16	169590	461500		823
1916_17	147967	463200		715
1917_18	84759	318700		595
1918_19	88953	309500		643
1919_20	122318	300700		911
1920_21	114472	302700		847
1921_22	130643	302800		966
1922_23	142186	370500		859
1923_24	107608	327200		736
1924_25	99288	338500		657
1925_26	100032	329900		679
1926_27	118817	326700		814
1927_28	102477	329500		696
1928_29	127378	327700		870
1929_30	126931	326600		870
1930_31	118236	339100		781
1931_32	71311	337600		473
1932_33	117647	342100		770
1933_34	116206	338600		768
1934_35	118951	339500		784
1935_36	107349	329400		729
1936_37	99327	297200		748
1937_38	97218	297800		731
1938_39	96337	301700		715
1939_40	89646	290500		691
1940_41	89209	288900		691
1941_42	89209	288900		691

BARLEY

NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	LBS
1892_93	281164	798800		788
1893_94	323457	845200		857
1894_95	310109	817200		850
1895_96	312709	823300		850
1896_97	426680	902100		1059
1897_98	521640	1186800		984
1898_99	547091	1262400		970
1899_1900	548581	1251400		981
1900_01	651624	1199200		1217
1901_02	237256	1136400		467
1902_03	395965	1254500		707
1903_04	438832	1303200		754
1904_05	430002	1291200		745
1905_06	535684	1374500		872
1906_07	511420	1304000		878
1907_08	419054	1124900		834
1908_09	423619	1048900		904
1909_10	462103	1175000		880
1910_11	467583	1239200		845
1911_12	478320	1288600		831
1912_13	511363	1216400		941
1913_14	533802	1250300		956
1914_15	384679	1255700		686
1915_16	469512	1265900		830
1916_17	488307	1213200		901
1917_18	434199	1260700		771
1918_19	409147	1194300		767
1919_20	443990	1277100		778
1920_21	448562	1278900		785
1921_22	499038	1290200		866
1922_23	525561	1312800		896
1923_24	472781	1219700		868
1924_25	483765	1261800		858
1925_26	474910	1243300		855
1926_27	461873	1206500		857
1927_28	421179	1219600		773
1928_29	440985	1216400		812
1929_30	467854	1272800		823
1930_31	427547	1285100		745
1931_32	466246	1279200		816
1932_33	496225	1448400		767
1933_34	398776	1240100		720
1934_35	488069	1486200		735
1935_36	326515	1226700		596
1936_37	362750	1211700		670
1937_38	385576	1240800		696
1938_39	356604	1233900		647
1939_40	332757	1144800		651
1940_41	364294	1238000		659
1941_42	364294	1238000		659

BARLEY

PATNA DIVISION

YEAR	OUTPUT	AREA	YEILD	LBS
1892_93	75176	168600		998
1893_94	104635	210000		1116
1894_95	96285	195700		1102
1895_96	106617	216400		1103
1896_97	116951	222900		1175
1897_98	103676	185500		1251
1898_99	109569	197000		1245
1899_1900	109524	197000		1245
1900_01	110366	199000		1242
1901_02	45030	173000		583
1902_03	64443	178700		807
1903_04	81026	224300		809
1904_05	55971	198500		631
1905_06	77280	196500		880
1906_07	83218	211600		880
1907_08	35568	154700		515
1908_09	72855	173900		938
1909_10	87740	223100		880
1910_11	55429	207900		597
1911_12	86600	220200		880
1912_13	59870	190400		704
1913_14	90750	230500		881
1914_15	76184	245800		694
1915_16	92496	255600		810
1916_17	104439	239700		975
1917_18	91893	248600		827
1918_19	38807	162700		534
1919_20	85678	237500		808
1920_21	77736	234200		743
1921_22	78853	237200		744
1922_23	83078	255600		728
1923_24	78451	219200		801
1924_25	70952	211300		752
1925_26	76529	221900		772
1926_27	63928	186200		769
1927_28	62101	220800		630
1928_29	61880	208100		666
1929_30	80146	256300		700
1930_31	70974	259000		613
1931_32	77691	258900		672
1932_33	77698	258700		672
1933_34	71659	258300		621
1934_35	70454	261800		602
1935_36	61738	256200		539
1936_37	64156	255900		561
1937_38	67373	255700		590
1938_39	63508	256300		555
1939_40	63737	256300		557
1940_41	70223	256400		613
1941_42	70223	256400		613

BARLEY

TERRHUT DIVISION

YEAR	OUTPUT	AREA	YIELD	LBS
1892_93	165651	435200		852
1893_94	177677	436300		912
1894_95	173896	425600		915
1895_96	167490	419100		895
1896_97	274672	513000		1199
1897_98	375212	788600		1065
1898_99	394401	850500		1038
1899_1900	398737	860100		1038
1900_01	389341	850000		1026
1901_02	140842	805100		391
1902_03	301287	915700		737
1903_04	284980	871700		732
1904_05	308687	900600		767
1905_06	363192	923500		880
1906_07	365317	928900		880
1907_08	322960	821200		880
1908_09	295627	751700		880
1909_10	324495	825100		880
1910_11	352651	896900		880
1911_12	362169	920900		880
1912_13	402034	890300		1011
1913_14	389534	884700		986
1914_15	277050	891100		696
1915_16	334514	883400		848
1916_17	349709	859200		911
1917_18	302696	879800		770
1918_19	297327	896600		742
1919_20	301142	894200		754
1920_21	322640	901200		801
1921_22	373272	921800		907
1922_23	393404	922200		955
1923_24	349518	862200		908
1924_25	379398	905900		938
1925_26	356613	890300		897
1926_27	352240	885100		891
1927_28	321714	867100		831
1928_29	339198	875300		868
1929_30	346674	880700		881
1930_31	317814	888700		801
1931_32	349649	887100		882
1932-33	379413	1054200		806
1933-34	289890	848400		765
1934-35	380142	1091200		780
1935-36	227678	837700		608
1936-37	260773	816100		715
1937-38	280779	844800		744
1938-39	261496	844700		693
1939-40	235682	749200		704
1940-41	262831	849300		693
1941-42	262831	849300		693

BARLEY

BHAGAL DIVISION

YEAR	OUTPUT	AREA	YEILD	LBS
1892_93	40337	195000		436
1893_94	41145	198900		445
1894_95	39928	195900		438
1895_96	38602	187800		420
1896_97	35057	166200		372
1897_98	42752	212700		476
1898_99	43121	214900		481
1899_1900	40320	194300		435
1900_01	151917	150200		336
1901_02	51384	158300		354
1902_03	30235	160100		358
1903_04	72826	207200		464
1904_05	65344	192100		430
1905_06	95212	254500		570
1906_07	62885	163500		366
1907_08	60526	149000		333
1908_09	55137	123300		276
1909_10	49868	126800		284
1910_11	59503	134400		301
1911_12	29551	147500		330
1912_13	49459	135700		303
1913_14	53518	135100		302
1914_15	31445	118800		266
1915_16	42502	126900		284
1916_17	34159	114300		256
1917_18	39610	132300		296
1918_19	73013	135000		302
1919_20	57170	145400		325
1920_21	48186	143500		321
1921_22	46913	131200		293
1922_23	49079	135000		302
1923_24	44812	138300		309
1924_25	33415	144600		323
1925_26	41768	131100		293
1926_27	45705	135200		302
1927_28	37364	131700		295
1928_29	39907	133000		297
1929_30	41034	135800		304
1930_31	38759	137400		307
1931_32	38906	133200		298
1932_33	39114	135500		303
1933_34	37227	133400		298
1934_35	37473	133200		298
1935_36	37099	132800		297
1936_37	37821	139700		312
1937_38	37424	140300		314
1938_39	31600	132900		297
1939_40	33338	139300		312
1940_41	31240	132300		296
1941_42	31240	132300		296

GRAM

NORTH BIHAR

YEAR	OUTPUT	AREA	YIELD	lbs
1892_93	221465	852400		581
1893_94	220747	865900		571
1894_95	236538	950400		557
1895_96	215538.5	927500		520
1896_97	196112	821100		535
1897_98	157535	636700		554
1898_99	157930	631600		560
1899_1900	159958	636400		563
1900_01	161387	643300		559
1901_02	171668	638000		602
1902_03	253997	700500		812
1903_04	284129	765700		831
1904_05	190638	693300		615
1905_06	265346	674700		880
1906_07	314268	799100		880
1907_08	245998	624700		882
1908_09	261491	664900		880
1909_10	306923	780400		880
1910_11	318556	810000		880
1911_12	352664	889100		888
1912_13	269169	778900		774
1913_14	361987	915920		885
1914_15	312012	1120000		624
1915_16	455096	1258500		810
1916_17	623539	1253200		1114
1917_18	468430	1325600		791
1918_19	267494	924000		648
1919_20	484306	1322400		820
1920_21	422462	1276900		741
1921_22	482186	1314300		821
1922_23	472850	1343000		788
1923_24	438547	1233800		792
1924_25	398609	1257400		710
1925_26	439689	1263900		779
1926_27	437078	1272500		769
1927_28	351763	1200200		656
1928_29	322310	1137800		634
1929_30	431957	1315100		735
1930_31	423640	1330500		713
1931_32	406278	1313800		692
1932_33	391715	1348000		650
1933_34	364445	1332800		612
1934_35	355091	1287900		617
1935_36	334916	1263700		593
1936_37	323603	1225700		591
1937_38	332262	1243100		598
1938_39	283093	1225100		517
1939_40	347787	1333500		584
1940_41	354983	1323100		600

GRAM

PATNA DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	69507	221000		704
1893_94	60139	185600		725
1894_95	77856	274900		634
1895_96	79335	277300		640
1896_97	84409	299600		631
1897_98	71767	245200		655
1898_99	71017	236400		672
1899_1900	70897	234600		676
1900_01	71187	236000		675
1901_02	68307	243100		629
1902_03	89377	233700		856
1903_04	102295	287500		797
1904_05	62313	252100		553
1905_06	98477	250400		880
1906_07	110865	281900		880
1907_08	103708	263700		880
1908_09	113147	287700		880
1909_10	150321	382200		881
1910_11	148424	377400		880
1911_12	157912	393900		898
1912_13	102321	346200		662
1913_14	213021	526520		906
1914_15	205874	683500		674
1915_16	310656	838200		830
1916_17	368106	842100		979
1917_18	319351	842800		848
1918_19	142475	459100		695
1919_20	297165	800800		831
1920_21	255850	768900		745
1921_22	274488	779800		788
1922_23	269588	807700		747
1923_24	272023	755800		806
1924_25	260686	764400		763
1925_26	272601	781500		781
1926_27	266896	782900		763
1927_28	200774	717100		627
1928_29	155487	641200		543
1929_30	253669	815600		696
1930_31	256655	822700		698
1931_32	247045	822100		673
1932_33	236770	822700		644
1933_34	214534	796200		603
1934_35	195813	767800		571
1935_36	206953	778600		595
1936_37	192267	743900		578
1937_38	186476	741400		563
1938_39	149690	740900		452
1939_40	186467	741100		563

1940_41	196726	744100	592
1941-42	196726	744100	592

GRAM

TIRHUT DIVISION

YEAR	OUTPUT	AREA	YIELD	lbs
1892_93	82780	261900		708
1893_94	82789	261800		708
1894_95	82750	261800		708
1895_96	63090.5	256500		550
1896_97	40838	143200		638
1897_98	43335	161700		600
1898_99	44137	163800		603
1899_1900	46463	170500		610
1900_01	49255	185000		596
1901_02	25989	156500		371
1902_03	55630	170500		730
1903_04	54250	181400		669
1904_05	50834	194400		585
1905_06	69139	175800		880
1906_07	65873	167500		880
1907_08	65207	165000		885
1908_09	61901	157400		880
1909_10	65873	167500		880
1910_11	68666	174600		880
1911_12	69689	177200		880
1912_13	67182	168500		893
1913_14	63909	159800		895
1914_15	49230	210000		525
1915_16	70611	198300		797
1916_17	175085	180400		2174
1917_18	70354	202200		779
1918_19	58328	193600		674
1919_20	60359	195700		690
1920_21	63177	194900		726
1921_22	76675	205400		836
1922_23	84262	212800		886
1923_24	70254	191500		821
1924_25	72517	187600		865
1925_26	65589	176900		830
1926_27	61995	172500		805
1927_28	61635	173500		795
1928_29	68742	183000		841
1929_30	70075	182700		859
1930_31	66892	182100		822
1931_32	61248	182000		753
1932_33	56116	178300		704
1933_34	55123	190200		649
1934_35	58818	170700		771
1935_36	46898	174300		602
1936_37	45666	164400		622
1937_38	56473	186800		677
1938_39	50284	178400		631

1939_40	76523	276800	619
1940_41	75895	276800	614
1941-42	75895	276800	614

GRAM

BHAGALPUR DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	69178	369500		419
1893_94	77819	418500		416
1894_95	75932	413700		411
1895_96	73113	393700		415
1896_97	70865	378300		419
1897_98	42483	229800		414
1898_99	42776	231400		414
1899_1900	42598	231300		412
1900_01	41445	227300		408
1901_02	77372	238400		726
1902_03	108990	296300		823
1903_04	127584	296800		962
1904_05	77491	246800		703
1905_06	97730	248500		880
1906_07	137530	349700		880
1907_08	77083	196000		880
1908_09	86443	219800		880
1909_10	90729	230700		880
1910_11	101466	258000		880
1911_12	125063	318000		880
1912_13	99666	264200		845
1913_14	85057	229600		829
1914_15	56908	226500		562
1915_16	73829	222000		744
1916_17	80398	230700		780
1917_18	78725	280600		628
1918_19	66691	271300		550
1919_20	126782	325900		871
1920_21	103435	313100		740
1921_22	131023	329100		891
1922_23	119000	322500		826
1923_24	96270	291500		739
1924_25	65406	305400		479
1925_26	101499	305500		744
1926_27	108187	317100		764
1927_28	89354	309600		646
1928_29	98081	313600		700
1929_30	108213	316800		765
1930_31	100093	325700		688
1931_32	97985	309700		708
1932_33	98829	347000		637
1933_34	94788	346400		612
1934_35	100460	349400		644
1935_36	81065	310800		584
1936_37	85670	317400		604
1937_38	89313	314900		635

LINSEED

NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	70589	407600		387
1893_94	73469	407600		403
1894_95	67200	377700		398
1895_96	51018	359300		318
1896_97	35343	237700		333
1897_98	42075	300500		313
1898_99	43102	311300		310
1899_1900	43015	304800		316
1900_01	47091	374600		281
1901_02	53690	450200		267
1902_03	100699	493700		456
1903_04	88781	522300		380
1904_05	55323	488200		253
1905_06	77895	499200		349
1906_07	63546	446900		318
1907_08	46551	387100		269
1908_09	31849	385100		185
1909_10	73016	420200		389
1910_11	83707	445600		420
1911_12	95979	492300		436
1912_13	81966	462900		396
1913_14	125262	579600		484
1914_15	91114	574600		355
1915_16	103570	594200		390
1916_17	116781	601700		434
1917_18	114449	669699		382
1918_19	79283	553000		321
1919_20	120618	652500		414
1920_21	96641	598600		361
1921_22	102869	634600		363
1922_23	128846	670000		430
1923_24	110231	650700		379
1924_25	112035	657400		381
1925_26	107379	613200		392
1926_27	71128	570700		279
1927_28	58051	542000		239
1928_29	71331	585000		273
1929_30	72334	581000		278
1930_31	66900	580300		258
1931_32	65986	580700		254
1932_33	68487	567500		270
1933_34	63562	556800		255
1934_35	71225	524600		304
1935_36	61743	486500		284
1936_37	64402	488600		295
1937_38	68687	524900		293
1938_39	62384	514600		271
1939_40	59965	498600		269
1940_41	55621	480300		259
1941-42	55621	480300		259

LINSEED

PATNA DIVISION

YEAR	AREA	OUTPUT	YEILD	lbs
1892_93	112000	9270		185
1893_94	92700	7933		191
1894_95	91300	7901		193
1895_96	88500	7826		198
1896_97	97900	7753		177
1897_98	92900	7869		189
1898_99	101700	8632		190
1899_1900	97100	8260		190
1900_01	104200	8943		192
1901_02	106400	14071		296
1902_03	101100	21890		485
1903_04	126400	23831		422
1904_05	99200	10622		239
1905_06	103000	14846		322
1906_07	110800	20949		423
1907_08	74800	6476		193
1908_09	81400	7449		204
1909_10	89700	13432		335
1910_11	90600	14358		354
1911_12	89800	15863		395
1912_13	83100	12651		341
1913_14	194900	46351		532
1914_15	195500	33807		387
1915_16	191800	41520		484
1916_17	203400	44783		493
1917_18	191500	38870		454
1918_19	119600	13422		251
1919_20	167400	33301		445
1920_21	153000	22854		334
1921_22	155900	26853		385
1922_23	193800	33064		382
1923_24	193500	30141		348
1924_25	194400	34806		401
1925_26	210700	38590		410
1926_27	192400	24657		287
1927_28	179200	17327		216
1928_29	195300	24759		283
1929_30	198200	26824		303
1930_31	198400	22347		252
1931_32	199600	24860		278
1932_33	203800	25661		282
1933_34	207400	23933		258
1934_35	199400	24749		278
1935_36	178900	20004		250
1936_37	175600	20815		265
1937_38	178500	21439		269
1938_39	161300	17827		247
1939_40	168100	20394		271
1940_41	156700	16895		241
1941-42	156700	16895		241

LINSEED

TIRHUT DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	55060	267100		461
1893_94	59540	287500		463
1894_95	53501	260000		460
1895_96	37688	245000		344
1896_97	21787	115000		422
1897_98	28342	180900		350
1898_99	28342	181700		349
1899_1900	27903	176500		354
1900_01	31318	239300		293
1901_02	34142	312200		244
1902_03	72894	360800		452
1903_04	57286	357800		358
1904_05	39193	355700		246
1905_06	51857	318000		365
1906_07	28900	246500		262
1907_08	25107	222300		252
1908_09	18129	223800		181
1909_10	37559	232600		361
1910_11	49052	254700		431
1911_12	60589	302500		448
1912_13	50550	281100		402
1913_14	57402	280600		458
1914_15	43299	278500		348
1915_16	43711	301700		324
1916_17	54484	296500		411
1917_18	51694	330700		350
1918_19	51743	327800		353
1919_20	53068	332600		357
1920_21	54768	335800		365
1921_22	48292	330900		321
1922_23	66245	334000		444
1923_24	61540	338900		406
1924_25	54110	323300		374
1925_26	50210	276500		406
1926_27	35591	276200		288
1927_28	32168	277300		259
1928_29	35986	298200		270
1929_30	34316	283300		271
1930_31	35024	282800		277
1931_32	30695	282500		243
1932_33	34479	273900		281
1933_34	26532	248600		239
1934_35	34397	221100		348
1935_36	31914	225200		317
1936_37	33869	230300		329
1937_38	33789	224500		337
1938_39	31223	232400		300
1939_40	28987	226000		287
1940_41	29695	224800		295
1941-42	29695	224800		295

LINSEED

BHAGALPUR DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	6259	28500		491
1893_94	5996	27400		490
1894_95	5798	26400		491
1895_96	5504	25300		477
1896_97	5803	24200		537
1897_98	5864	26700		491
1898_99	6128	27900		491
1899_1900	6852	31200		491
1900_01	6830	31100		491
1901_02	5477	31600		388
1902_03	5915	31800		416
1903_04	7664	38100		450
1904_05	5508	33300		370
1905_06	11192	78200		320
1906_07	13697	89600		342
1907_08	14968	90000		372
1908_09	6271	79900		175
1909_10	22025	97900		503
1910_11	20297	100300		453
1911_12	19527	100500		435
1912_13	18765	98700		425
1913_14	21509	104100		462
1914_15	14008	100600		311
1915_16	18339	100700		407
1916_17	17514	101800		385
1917_18	23885	147499		362
1918_19	14118	105600		299
1919_20	34249	152500		503
1920_21	19019	109800		388
1921_22	27724	141800		437
1922_23	29537	142200		465
1923_24	18550	118300		351
1924_25	23119	139700		370
1925_26	18579	126000		330
1926_27	10880	102100		238
1927_28	8556	85500		224
1928_29	10586	91500		259
1929_30	11194	99500		252
1930_31	9529	99100		215
1931_32	10431	98600		236
1932_33	8347	89800		208
1933_34	13097	100800		291
1934_35	12079	104100		259
1935_36	9825	82400		267
1936_37	9718	82700		263
1937_38	13459	121900		247
1938_39	13334	120900		247
1939_40	10584	104500		226
1940_41	9031	98800		204
1941-42	9031	98800		204

SUGAR NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	341057	371400		2056
1893_94	341660	372200		2056
1894_95	288082	323400		1995
1895_96	284486	312200		2041
1896_97	272679	302500		2019
1897_98	260936	294300		1986
1898_99	248071	293800		1891
1899_1900	250407	281700		1991
1900_01	243574	279300		1953
1901_02	228937	227900		2250
1902_03	249046	240200		2322
1903_04	199730	238200		1878
1904_05	175700	244900		1607
1905_06	266837	243800		2451
1906_07	216433	220400		2199
1907_08	221201	241900		2048
1908_09	145509	217200		1500
1909_10	147108	188300		1749
1910_11	203159	204600		2224
1911_12	228512	215000		2380
1912_13	219553	218000		2255
1913_14	217925	216300		2256
1914_15	205369	544000		845
1915_16	217146	216400		2247
1916_17	225357	233500		2161
1917_18	205935	214600		2149
1918_19	204736	227600		2014
1919_20	213620	228900		2090
1920_21	231068	239900		2157
1921_22	247011	261400		2116
1922_23	220962	248800		1989
1923_24	252550	262700		2153
1924_25	188085	245400		1716
1925_26	244189	249700		2190
1926_27	235024	212070		2482
1927_28	238705	249300		2144
1928_29	238940	246300		2173
1929_30	221474	385900		1285
1930_31	233808	382700		1368
1931_32	241417	402100		1344
1932_33	272146	431800		1411
1933_34	516276	387700		2982
1934_35	533626	406800		2938
1935_36	572667	429300		2988
1936_37	530238	418500		2838
1937_38	312728	515900		1357
1938_39	355155	528000		1506
1939_40	435008	582600		1672
1940_41	445941	456850		2186
1941_42	445941	456850		2186

SUGAR PATNA DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	122693	123700		2221
1893_94	123904	125000		2220
1894_95	65495	71600		2049
1895_96	61899	60400		2295
1896_97	59387	64300		2068
1897_98	66383	70700		2103
1898_99	64171	69200		2077
1899_1900	64171	69200		2077
1900_01	64174	69300		2074
1901_02	71691	75000		2141
1902_03	75693	81800		2072
1903_04	88448	83700		2367
1904_05	78324	84500		2076
1905_06	87233	84800		2304
1906_07	95960	90300		2380
1907_08	81710	102200		1790
1908_09	75806	95100		1785
1909_10	70547	90300		1750
1910_11	84644	91800		2065
1911_12	110557	95800		2585
1912_13	101943	94900		2406
1913_14	95681	92100		2327
1914_15	94769	413400		513.
1915_16	104218	92300		2529
1916_17	102907	97900		2354
1917_18	94873	87700		2423
1918_19	89551	95200		2107
1919_20	82733	91900		2016
1920_21	93436	95300		2196
1921_22	87852	93000		2116
1922_23	86521	93000		2083
1923_24	93029	105000		1984
1924_25	74436	88600		1881
1925_26	88523	91200		2174
1926_27	79705	51870		3442
1927_28	83472	88800		2105
1928_29	85316	85900		2224
1929_30	86352	234600		824.
1930_31	87509	236700		828.
1931_32	87810	237900		826.
1932_33	88661	233400		850.
1933_34	139274	94700		3294
1934_35	150651	102600		3289
1935_36	172982	112900		3432
1936_37	201430	116500		3872
1937_38	69710	230300		678.
1938_39	109641	246700		995.
1939_40	123254	254700		1083
1940_41	138432	118000		2627
1941-42	138432	118000		2627

SUGAR TIRNUT DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	176646	168200		2352
1893_94	177524	168900		2354
1894_95	177523	169100		2351
1895_96	177523	169100		2351
1896_97	168988	157500		2403
1897_98	142241	134300		2372
1898_99	142461	134400		2374
1899_1900	148113	141600		2343

1900_01	138400	131000		2366
1901_02	64135	73600		1951
1902_03	78342	81100		2163
1903_04	62933	77000		1830
1904_05	49090	81300		1352
1905_06	104956	87100		2699
1906_07	76519	83900		2042
1907_08	100587	92300		2441
1908_09	48568	82900		1312
1909_10	45863	63700		1612
1910_11	86434	79100		2447
1911_12	95381	85600		2495
1912_13	94038	90300		2332
1913_14	98877	90900		2436
1914_15	91529	99300		2064
1915_16	86993	90300		2157
1916_17	100636	101700		2216
1917_18	86706	95100		2042
1918_19	96513	101700		2125
1919_20	102644	103300		2225
1920_21	98034	109500		2005
1921_22	117166	128700		2039
1922_23	101840	122500		1862
1923_24	128097	123900		2315
1924_25	84114	121800		1546
1925_26	125333	125800		2231
1926_27	122759	125100		2198
1927_28	122282	125600		2180
1928_29	121279	125100		2171
1929_30	106502	121400		1965
1930_31	119137	115300		2314
1931_32	125449	133900		2098
1932_33	156404	168000		2085
1933_34	325259	256300		2842
1934_35	331765	266300		2790
1935_36	332082	266800		2788
1936_37	285278	247800		2578
1937_38	212348	250600		1898
1938_39	215452	248400		1942
1939_40	267002	279800		2137
1940_41	253871	284250		2000
1941-42	253871	284250		2000

SUGAR BHAGALPUR DIVISION

YEAR	AREA	OUTPUT	YEILD	lbs
1892_93	79500	41718		4268
1893_94	78300	40232		4359
1894_95	82700	45064		4110
1895_96	82700	45064		4110
1896_97	80700	44304		4080
1897_98	89300	52312		3823
1898_99	90200	41439		4875
1899_1900	70900	38123		4165
1900_01	79000	41000		4316
1901_02	79300	93111		1907

1902_03	77300	95011		1822
1903_04	77500	48349		3590
1904_05	79100	48286		3669
1905_06	71900	74648		2157
1906_07	46200	43954		2354
1907_08	47400	38904		2729
1908_09	39200	21135		4154
1909_10	34300	30698		2502
1910_11	33700	32081		2353
1911_12	33600	22574		3334
1912_13	32800	23572		3116
1913_14	33300	23367		3192
1914_15	31300	19071		3676
1915_16	33800	25935		2919
1916_17	33900	21814		3481
1917_18	31800	24356		2924
1918_19	30700	18672		3682
1919_20	33700	28243		2672
1920_21	35100	39598		1985
1921_22	39700	41993		2117
1922_23	33300	32601		2288
1923_24	33800	31424		2409
1924_25	35000	29535		2654
1925_26	32700	30333		2414
1926_27	35100	32560		2414
1927_28	34900	32951		2372
1928_29	35300	32345		2444
1929_30	29900	28620		2340
1930_31	30700	27162		2531
1931_32	30300	28158		2410
1932_33	30400	27081		2514
1933_34	36700	51743		1588
1934_35	37900	51210		1657
1935_36	49600	67603		1643
1936_37	54200	43530		2789
1937_38	35000	30670		2556
1938_39	32900	30062		2451
1939_40	48100	44752		2407
1940_41	54600	53638		2280
1941-42	54600	53638		2280

RAPE AND MUSTARD

NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	68654	326511		470
1893_94	72404	326511		496
1894_95	59174	326511		405
1895_96	60914	326511		417
1896_97	64556	326511		442
1897_98	66507	326511		456
1898_99	66507	326511		456
1899_1900	71550	335900		477
1900_01	72652	325900		499
1901_02	54095	295700		409
1902_03	63656	344300		414
1903_04	68839	350000		440
1904_05	56017	352400		356
1905_06	67140	376300		399
1906_07	69449	396600		392
1907_08	59840	359700		372
1908_09	24822	316000		175
1909_10	134162	458200		655
1910_11	273299	563600		1086
1911_12	105832	550900		430
1912_13	96173	521800		412
1913_14	105043	535900		439
1914_15	70346	497700		316
1915_16	99707	524300		425
1916_17	115423	562600		459
1917_18	104260	621200		375
1918_19	86455	554600		349
1919_20	125981	629500		448
1920_21	109032	606300		402
1921_22	107350	612300		392
1922_23	122179	620900		440
1923_24	108040	611200		395
1924_25	117397	624700		420
1925_26	89046	556900		358
1926_27	108039	541300		447
1927_28	106053	526100		451
1928_29	112548	536200		470
1929_30	100669	468300		481
1930_31	90592	461800		439
1931_32	82708	439700		421
1932_33	83047	432500		430
1933_34	78668	402800		437
1934_35	79008	404500		437
1935_36	75816	407200		417
1936_37	70464	375210		420
1937_38	69029	370300		417
1938_39	63369	351400		403
1939_40	56098	357600		351
1940_41	59487	345300		385

RAPE AND MUSTARD

PATNA DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	10903	44266		551
1893_94	10903	44266		551
1894_95	6691	44266		338
1895_96	9271	44266		469
1896_97	7471	44266		378
1897_98	7894	44266		399
1898_99	7894	44266		399
1899_1900	11411	46100		554
1900_01	11138	45000		554
1901_02	6343	42000		338
1902_03	7551	35800		472
1903_04	9580	55800		384
1904_05	5276	40900		288
1905_06	6432	39900		361
1906_07	6016	36600		368
1907_08	2420	31000		174
1908_09	3572	34300		233
1909_10	6680	40500		369
1910_11	8814	42700		462
1911_12	8186	43100		425
1912_13	6417	40000		359
1913_14	8907	40200		496
1914_15	7804	46500		375
1915_16	10855	58300		417
1916_17	13252	57500		516
1917_18	10845	52700		460
1918_19	5709	44400		288
1919_20	9094	45700		445
1920_21	6439	42700		337
1921_22	6982	41900		373
1922_23	8493	49100		387
1923_24	7348	47900		343
1924_25	8610	51600		373
1925_26	8286	49500		374
1926_27	10981	49100		500
1927_28	7757	45600		381
1928_29	9798	46500		471
1929_30	11164	49800		502
1930_31	10222	52100		439
1931_32	11011	52400		470
1932_33	11718	54400		482
1933_34	11096	54900		452
1934_35	10211	52700		434
1935_36	8641	50900		380
1936_37	9477	39110		542
1937_38	9589	50600		424
1938_39	8432	50300		375
1939_40	9503	49900		426
1940_41	7792	51400		339

RAPE AND MUSTARD

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	17133	78495		488
1893_94	17130	78495		488
1894_95	11712	78495		334
1895_96	14427	78495		411
1896_97	13866	78495		395
1897_98	18053	78495		515
1898_99	18053	78495		515
1899_1900	22238	102000		488
1900_01	19845	91100		487
1901_02	9850	64400		342
1902_03	15817	87200		406
1903_04	14943	85200		392
1904_05	11235	86200		291
1905_06	14580	79200		412
1906_07	14248	89200		357
1907_08	15510	81400		426
1908_09	8811	65100		303
1909_10	66231	142300		1042
1910_11	201734	239600		1885
1911_12	49475	254100		436
1912_13	37139	205400		405
1913_14	42745	204100		469
1914_15	24680	180400		306
1915_16	30333	187800		361
1916_17	35232	173800		454
1917_18	27809	192800		323
1918_19	30314	194200		349
1919_20	29161	192700		338
1920_21	31000	194200		357
1921_22	34490	193900		398
1922_23	40621	190300		478
1923_24	33438	187100		400
1924_25	41148	191400		481
1925_26	29837	155100		430
1926_27	33039	157800		468
1927_28	33303	153900		484
1928_29	36252	165100		491
1929_30	37798	168800		501
1930_31	37058	170800		486
1931_32	29103	161700		403
1932_33	34082	168000		454
1933_34	25474	145700		391
1934_35	32066	150500		477
1935_36	31416	153200		459
1936_37	29905	151400		442
1937_38	29990	152700		439
1938_39	27015	149100		405
1939_40	26732	148700		402
1940_41	28490	147700		432
1941-42	28490	147700		432

BHAGALPUR DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	40613	203750		446
1893_94	44371	203750		487
1894_95	40771	203750		448
1895_96	37216	203750		409
1896_97	43219	203750		475
1897_98	40560	203750		445
1898_99	40560	203750		445
1899_1900	37901	187800		452
1900_01	41669	189800		491
1901_02	37902	189300		448
1902_03	40288	221300		407
1903_04	44316	209000		474
1904_05	39506	225300		392
1905_06	46128	257200		401
1906_07	49185	270800		406
1907_08	41910	247300		379
1908_09	12439	216600		128
1909_10	61251	275400		498
1910_11	62751	281300		499
1911_12	48171	253700		425
1912_13	52617	276400		426
1913_14	53391	291600		410
1914_15	37862	270800		313
1915_16	58519	278200		471
1916_17	66939	331300		452
1917_18	65606	375700		391
1918_19	50432	316000		357
1919_20	87726	391100		502
1920_21	71593	369400		434
1921_22	65878	376500		391
1922_23	73065	381500		429
1923_24	67254	376200		400
1924_25	67639	381700		396
1925_26	50923	352300		323
1926_27	64019	334400		428
1927_28	64993	326600		445
1928_29	66498	324600		458
1929_30	51707	249700		463
1930_31	43312	238900		406
1931_32	42594	225600		422
1932_33	37247	210100		397
1933_34	42098	202200		466
1934_35	36731	201300		408
1935_36	35759	203100		394
1936_37	31082	184700		376
1937_38	29450	167000		395
1938_39	27922	152000		411
1939_40	19863	159000		279
1940_41	23205	146200		355
1941-42	23205	146200		355

TIL

NORTH BIHAR

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	92677	666500		311
1893_94	23486	172050		305
1894_95	3367	26800		281
1895_96	2878	27200		237
1896_97	4997	47800		234
1897_98	3844	22500		382
1898_99	3844	26450		325
1899_1900	3844	24400		352
1900_01	3844	25400		338
1901_02	2690	23100		260
1902_03	2817	22400		281
1903_04	3378	26400		286
1904_05	2568	23200		247
1905_06	3385	28300		267
1906_07	3189	24600		290
1907_08	2005	22000		204
1908_09	1199	15000		179
1909_10	2956	21600		306
1910_11	4834	21000		515
1911_12	3034	20800		326
1912_13	3320	22700		327
1913_14	3016	21000		321
1914_15	2912	21800		299
1915_16	3138	23200		302
1916_17	3437	26200		293
1917_18	3918	29300		299
1918_19	3300	29200		253
1919_20	5007	28400		394
1920_21	3564	25800		309
1921_22	2674	21300		281
1922_23	2454	21700		253
1923_24	3072	23400		294
1924_25	2672	21200		282
1925_26	2558	20600		278
1926_27	2455	20700		265
1927_28	2598	20200		288
1928_29	2382	19400		275
1929_30	2524	20900		270
1930_31	2265	21200		239
1931_32	2346	21200		247
1932_33	2138	20200		237
1933_34	2671	24600		243
1934_35	2277	22000		231
1935_36	2167	21700		223
1936_37	2067	22000		210
1937_38	2123	21400		222
1938_39	1761	21000		187
1939_40	2879	22200		290
1940_41	2651	23500		252
1941-42	2651	23500		252

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	163	1300		202
1893_94	2044	14600		313
1894_95	1900	13000		327
1895_96	1218	11200		243
1896_97	3394	34000		223
1897_98	2163	12200		397
1898_99	2163	14900		325
1899_1900	2163	12700		381
1900_01	2163	11000		440
1901_02	933	10800		193
1902_03	1515	10800		314
1903_04	2216	15300		324
1904_05	1299	12000		242
1905_06	1572	12400		283
1906_07	1452	10900		298
1907_08	160	5100		70
1908_09	109	2700		90
1909_10	232	3100		167
1910_11	213	3000		159
1911_12	382	2600		329
1912_13	385	2700		319
1913_14	301	2400		280.9333
1914_15	361	2500		323.456
1915_16	374	2500		335.104
1916_17	855	5500		348.2181
1917_18	479	5400		198.6962
1918_19	435	5000		194.88
1919_20	489	4400		248.9454
1920_21	406	3900		233.1897
1921_22	188	1900		221.6421
1922_23	271	2800		216.8
1923_24	294	3200		205.8
1924_25	221	2800		176.8
1925_26	263	3200		184.1
1926_27	132	3000		98.56
1927_28	320	2100		341.3333
1928_29	340	3400		224
1929_30	329	3300		223.3212
1930_31	342	3400		225.3176
1931_32	330	3400		217.4117
1932_33	297	3200		207.9
1933_34	402	3500		257.28
1934_35	416	3500		266.24
1935_36	416	3200		291.2
1936_37	382	3300		259.2969
1937_38	323	3200		226.1
1938_39	250	2800		200
1939_40	317	3000		236.6933
1940_41	233	2700		193.3037
1941-42	233	2700		193.3037

TIL

TIRHUT DIVISION

YEAR OUTPUT AREA YEILD lbs

1892_93	50176	324700	346
1893_94	2564	22600	254
1894_95	1289	12300	234
1895_96	1515	14800	229
1896_97	1468	12600	260
1897_98	1356	9100	333
1898_99	1356	10050	302
1899_1900	1356	10600	286
1900_01	1356	10800	281
1901_02	1243	8700	320
1902_03	787	8100	217
1903_04	745	7600	219
1904_05	776	7700	225
1905_06	891	8100	246
1906_07	903	7600	266
1907_08	1230	10800	255
1908_09	681	7200	211
1909_10	1385	9100	340
1910_11	3423	10100	759
1911_12	1423	10200	312
1912_13	1820	11800	345
1913_14	1580	10700	330
1914_15	1843	12000	344
1915_16	1622	12800	283
1916_17	1894	13800	307
1917_18	2811	18600	338
1918_19	2473	19100	290
1919_20	3598	18100	445
1920_21	2384	16100	331
1921_22	2064	16600	278
1922_23	1604	14400	249
1923_24	2114	14800	319
1924_25	1792	13500	297
1925_26	1901	13400	317
1926_27	1889	13400	315
1927_28	1803	13500	299
1928_29	1780	13400	297
1929_30	1793	13400	299
1930_31	1585	13400	264
1931_32	1584	13400	264
1932_33	1518	13300	255
1933_34	1811	16300	248
1934_35	1370	13800	222
1935_36	1370	14400	213
1936_37	1215	14100	193
1937_38	1427	14200	225
1938_39	1087	14400	169
1939_40	2150	15200	316
1940_41	2157	16800	287
1941_42	2157	16800	287

TIL

BHAGALPUR DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	42338	340000		278
1893_94	18878	134850		313
1894_95	178	1500		265
1895_96	145	1200		270
1896_97	135	1200		252
1897_98	325	1200		606
1898_99	325	1500		485
1899_1900	325	1100		661
1900_01	325	3600		202
1901_02	514	3600		319
1902_03	515	3500		329
1903_04	417	3500		266
1904_05	493	3500		315
1905_06	922	7800		264
1906_07	834	6100		306
1907_08	615	6100		225
1908_09	409	5100		179
1909_10	1339	9400		319
1910_11	1198	7900		339
1911_12	1229	8000		344
1912_13	1115	8200		304
1913_14	1135	7900		321
1914_15	708	7300		217
1915_16	1142	7900		323
1916_17	688	6900		223
1917_18	628	5300		265
1918_19	392	5100		172
1919_20	920	5900		349
1920_21	774	5800		298
1921_22	422	2800		337
1922_23	579	4500		288
1923_24	664	5400		275
1924_25	659	4900		301
1925_26	394	4000		220
1926_27	434	4300		226
1927_28	475	4600		231
1928_29	262	2600		225
1929_30	402	4200		214
1930_31	338	4400		172
1931_32	432	4400		219
1932_33	323	3700		195
1933_34	458	4800		213
1934_35	491	4700		234
1935_36	381	4100		208
1936_37	470	4600		228
1937_38	373	4000		208
1938_39	424	3800		249
1939_40	412	4000		230
1940_41	261	4000		146
1941-42	261	4000		146

TOBACCO

NORTH BIHAR

YEAR	AREA	OUTPUT	YEILD	lbs
1892_93	144400	50502		783
1893_94	150600	61528		915
1894_95	190400	75996		894
1895_96	191800	56876		664
1896_97	195600	97826		1120
1897_98	189100	66294		785
1898_99	188000	66294		789
1899_1900	128800	66294		1152
1900_01	136100	66294		1091
1901_02	96800	34763		804
1902_03	100100	41848		936
1903_04	103700	42296		913
1904_05	112500	35313		703
1905_06	113100	56588		1120
1906_07	106900	53448		1119
1907_08	106000	52998		1119
1908_09	98200	49098		1119
1909_10	101700	50849		1119
1910_11	101200	50598		1119
1911_12	103800	52747		1138
1912_13	91900	42613		1038
1913_14	102300	45926		1005
1914_15	91800	31093		758.
1915_16	105100	49460		1054
1916_17	105100	46546		992
1917_18	107200	40782		852
1918_19	130130	49098		845
1919_20	107500	42595		837
1920_21	106000	43473		918
1921_22	105700	46795		991
1922_23	105500	52598		1116
1923_24	103600	40334		872
1924_25	100700	39270		873
1925_26	117300	49008		935
1926_27	126500	55368		980
1927_28	132200	63098		1069
1928_29	131000	55053		941
1929_30	128200	57417		1003
1930_31	122400	55153		1009
1931_32	126800	52757		931
1932_33	146800	46330		706
1933_34	125900	40620		722
1934_35	123000	48334		880
1935_36	132500	43573		736
1936_37	123900	43963		794
1937_38	122200	43983		806
1938_39	101100	33493		742
1939_40	109200	32192		660
1940_41	105300	30430		647

FATNA DIVISION

YEAR	AREA	OUTPUT	YEILD	lbs
1892_93	6100	2450		899
1893_94	7000	3120		998
1894_95	2200	875		890
1895_96	3600	690		429
1896_97	3400	1700		1120
1897_98	3200	1445		1011
1898_99	2500	1445		1294
1899_1900	2500	1445		1294
1900_01	2500	1445		1294
1901_02	2500	1190		1066
1902_03	2500	1212		1085
1903_04	2700	1300		1078
1904_05	2700	398		330
1905_06	2500	1250		1120
1906_07	2500	1250		1120
1907_08	2300	1150		1120
1908_09	1800	900		1120
1909_10	2300	1150		1120
1910_11	2200	1100		1120
1911_12	2200	1100		1120
1912_13	2000	927		1038
1913_14	1900	958		1129
1914_15	1000	344		770
1915_16	900	450		1120
1916_17	900	618		1538
1917_18	900	450		1120
1918_19	3630	1048		646
1919_20	500	250		1120
1920_21	500	203		909
1921_22	700	308		985
1922_23	700	346		1107
1923_24	1100	399		812
1924_25	1000	399		893
1925_26	1000	438		981
1926_27	900	388		965
1927_28	5500	2240		912
1928_29	5400	2200		912
1929_30	1500	565		843
1930_31	1500	531		792
1931_32	1500	591		882
1932_33	1500	469		700
1933_34	1500	508		758
1934_35	1700	544		716
1935_36	1800	565		703
1936_37	1700	588		774
1937_38	1700	556		732
1938_39	1800	581		723
1939_40	1800	588		731

TOBACCO

TIRHUT DIVISION

YEAR	AREA	OUTPUT	YEILD	lbs
1892_93	37300	30400		780
1893_94	36500	33009		854
1894_95	35100	31774		836
1895_96	35400	27100		710
1896_97	36800	43410		1120
1897_98	73100	29734		911
1898_99	73400	29734		907
1899_1900	72200	29734		922
1900_01	34600	29734		787
1901_02	46400	16059		775
1902_03	48300	18509		858
1903_04	50200	18675		833
1904_05	58500	19003		727
1905_06	58900	29458		1120
1906_07	53600	26798		1119
1907_08	54400	27198		1119
1908_09	51700	25848		1119
1909_10	52100	26049		1119
1910_11	51400	25698		1119
1911_12	51900	26798		1156
1912_13	47800	25808		1209
1913_14	54300	26086		1076
1914_15	50700	20560		908
1915_16	57900	26387		1020
1916_17	54000	22684		940
1917_18	60200	34491		911
1918_19	79000	32853		931
1919_20	58700	24795		946
1920_21	57200	25154		985
1921_22	56500	27073		1073
1922_23	56500	28252		1120
1923_24	54100	22828		945
1924_25	49200	22417		1020
1925_26	65600	30582		1044
1926_27	75900	35687		1053
1927_28	74100	41150		1243
1928_29	71000	32039		1010
1929_30	72000	36000		1120
1930_31	72300	36150		1120
1931_32	71700	31819		994
1932_33	70500	20742		659
1933_34	57400	20318		792
1934_35	57500	26393		1028
1935_36	65800	23833		811
1936_37	57500	21648		843
1937_38	50700	19058		842
1938_39	56800	20324		801

BHAGALPUR DIVISION

YEAR	AREA	OUTPUT	YEILD	lbs
1892_93	51000	17652		775
1893_94	57100	25399		996
1894_95	103100	43347		941
1895_96	102800	29086		633
1896_97	105400	52716		1120
1897_98	112800	35115		697
1898_99	112100	35115		701
1899_1900	54100	35115		1453
1900_01	49000	35115		1605
1901_02	47900	17514		819
1902_03	49300	22127		1005
1903_04	50800	22321		984
1904_05	51300	15912		694
1905_06	51700	25880		1121
1906_07	50800	25400		1120
1907_08	49300	24650		1120
1908_09	44700	22350		1120
1909_10	47300	23650		1120
1910_11	47600	23800		1120
1911_12	49700	24849		1119
1912_13	42100	15878		844
1913_14	46100	18882		917
1914_15	40100	10189		569
1915_16	46300	22623		1094
1916_17	50200	23244		1037
1917_18	46100	15841		769
1918_19	47500	15197		716
1919_20	48300	17550		813
1920_21	48300	18116		840
1921_22	48500	19414		896
1922_23	48300	24000		1113
1923_24	48400	17107		791
1924_25	50500	16454		729
1925_26	50700	17988		794
1926_27	49700	19293		869
1927_28	52600	19708		839
1928_29	54600	20814		853
1929_30	54700	20852		853
1930_31	48600	18472		851
1931_32	53600	20347		850
1932_33	74800	25119		752
1933_34	67000	19794		661
1934_35	63800	21397		751
1935_36	64900	19175		661
1936_37	64700	21727		752
1937_38	69800	24369		782
1938_39	42500	12588		663
1939_40	46000	10909		531
1940_41	41500	11256		607
1941-42	41500	11256		607

NORTH BIHAR

JUTE

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	281469	94640		6661
1893_94	281324	95640		6588
1894_95	300394	102040		6594
1895_96	296204	102140		6495
1896_97	304513	102140		6678
1897_98	269215	88140		6841
1898_99	195726	63640		6889
1899_1900	199019	64740		6886
1900_01	228122	74440		6864
1901_02	56052	79440		1580
1902_03	49443	77440		1430
1903_04	58216	74240		1756
1904_05	141415	252640		1253
1905_06	810971	291140		6239
1906_07	499423	246140		4545
1907_08	734470	281400		5846
1908_09	367068	223000		3687
1909_10	291243	185600		3515
1910_11	358725	233200		3445
1911_12	673151	243700		6187
1912_13	725337	275400		5899
1913_14	539831	288400		4192
1914_15	612259	297200		4614
1915_16	538710	163100		7398
1916_17	505041	202300		5592
1917_18	597216	199100		6719
1918_19	294864	128800		5128
1919_20	451318	180700		5594
1920_21	286371	157800		4065
1921_22	179481	90600		4437
1922_23	267757	126900		4726
1923_24	387327	164700		5267
1924_25	356865	182300		4384
1925_26	516516	229000		5052
1926_27	626253	258000		5437
1927_28	365729	173200		4729
1928_29	376440	178200		4731
1929_30	378131	175800		4818
1930_31	280283	156000		4024
1931_32	220085	128600		3833
1932_33	193607	113800		3810
1933_34	214541	171200		2807
1934_35	249227	146900		3800
1935_36	179883	127600		3157
1936_37	493480	210100		5261
1937_38	894614	444100		4512
1938_39	434600	314700		3093

1939_40	707433	264600	5988
1940_41	703448	280700	5613
1941-42	703448	280700	5613

TIRHUT DIVISION

JUTE

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	10290	4240		5436
1893_94	7149	4240		3776
1894_95	7016	4240		3706
1895_96	2673	4240		1414
1896_97	10839	4240		5726
1897_98	17535	4240		9263
1898_99	17535	4240		9263
1899_1900	17535	4240		9263
1900_01	17535	4240		9263
1901_02	17535	4240		9263
1902_03	17535	4240		9263
1903_04	17535	4240		9263
1904_05	17535	4240		9263
1905_06	17535	4240		9263
1906_07	17535	4240		9263
1907_08	24232	9800		5538
1908_09	6417	3800		3782
1909_10	6596	4000		3693
1910_11	790	1200		1474
1911_12	6858	2400		6400
1912_13	6495	2300		6325
1913_14	8442	3500		5402
1914_15	19920	7100		6284
1915_16	7275	2500		6518
1916_17	10170	3400		6700
1917_18	14400	4800		6720
1918_19	12600	4200		6720
1919_20	12912	4600		6287
1920_21	8556	3600		5323
1921_22	8614	3400		5675
1922_23	7134	2700		5918
1923_24	7994	3100		5776
1924_25	5490	2400		5124
1925_26	6375	2400		5950
1926_27	10350	4100		5654
1927_28	10440	4800		4872
1928_29	11925	4800		5565
1929_30	32028	11700		6131
1930_31	35560	11700		6808
1931_32	16500	6500		5686
1932_33	14065	5800		5432
1933_34	14469	5900		5493
1934_35	13085	5200		5636
1935_36	19013	6500		6552
1936_37	18486	6400		6470
1937_38	18714	6600		6351
1938_39	18600	6700		6218
1939_40	17867	6500		6157

JUTE

BHAGALPUR DIVISION

YEAR	OUTPUT	AREA	YEILD	lbs
1892_93	271179	90400		6719
1893_94	274175	91400		6719
1894_95	293378	97800		6719
1895_96	293526	97900		6716
1896_97	293674	97900		6719
1897_98	251680	83900		6719
1898_99	178191	59400		6719
1899_1900	181484	60500		6719
1900_01	210587	70200		6719
1901_02	38517	75200		1147
1902_03	31908	73200		976
1903_04	40681	70000		1301
1904_05	123880	248400		1117
1905_06	793436	286900		6194
1906_07	481888	241900		4462
1907_08	710238	271600		5857
1908_09	360651	219200		3685
1909_10	284647	181600		3511
1910_11	357935	232000		3455
1911_12	666293	241300		6185
1912_13	718842	273100		5896
1913_14	531389	284900		4177
1914_15	592339	290100		4573
1915_16	531435	160600		7412
1916_17	494871	198900		5573
1917_18	582816	194300		6719
1918_19	282264	124600		5074
1919_20	438406	176100		5576
1920_21	277815	154200		4035
1921_22	170867	87200		4389
1922_23	260623	124200		4700
1923_24	379333	161600		5258
1924_25	351375	179900		4375
1925_26	510141	226600		5042
1926_27	615903	253900		5433
1927_28	355289	168400		4725
1928_29	364515	173400		4708
1929_30	346103	164100		4724
1930_31	244723	144300		3798
1931_32	203585	122100		3734
1932_33	179542	108000		3723
1933_34	200072	165300		2711
1934_35	236142	141700		3732
1935_36	160870	121100		2975
1936_37	474994	203700		5223
1937_38	875900	437500		4484
1938_39	416000	308000		3025
1939_40	689566	258100		5934
1940_41	689566	272700		5664